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Business case analysis for social and environmental initiatives: the case of the Milton Keynes Electric Light Vehicle InfraStructure Project

A thesis submitted to The Open University for the award of the degree of Doctor of Philosophy (PhD) in Accounting and Finance

Abukari SalifuAtchulo

BSc (Banking and Finance)

MSc (Accounting and Finance)

March 2015

DATE OF SUBMISSION : 30 AUGUST 2013

DATE OF AWARD : 13 OCTOBER 2015

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Acknowledgement

First and foremost, all the glory goes to God for giving me the strength, wisdom and motivation to complete this study.

I would like to say a big thank you to my supervisors, Dr Martin Upton and Prof Stephen Potter, for their support, advice and encouragement throughout this study. There were a few turbulent times during my study but they were always there to provide support and advice to support the successful completion of this thesis. Their insightful feedback on my work has guided me to fine-tune my thoughts on my thesis to its current state. I would also like to say a big thank you to Dr Mike Lucas for making time to provide me with insightful ideas in the early stages of my research. In addition, many thanks go to Prof Peter Walton for providing guidance at the start of this project.

I would also like to thank all my colleagues at The Open University Business School who on many occasions provided feedback on my work during our regular student-to-student presentations.

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Abstract

Concerns about climate change, energy security and advances in battery technology have stimulated a renewed interest in electric vehicles. The uptake of electric vehicles can encourage and facilitate the shift from fossil fuels to a low-carbon transport system. The Milton Keynes Electric Light Vehicle InfraStructure (ELVIS) project promotes widespread use of battery-powered cars.

The organisations examined in this study use conventional accounting-based tools that Gray (2006) views as maximising capitalism to the exclusion of almost anything else that might be termed wonderful, aspirational or desirable to the human condition.

Bebbington et al. (2007) indicate that sustainability assessment modelling is a superior technique for assessing sustainable development initiatives such as an engagement with electric vehicles. The model proposed by Bebbington et al. (2007) takes into consideration social, environmental and other externalities that conventional accounting does not account for.

Using the lens of Dillard et al. (2004,) this study examined participating organisations in the Milton Keynes electric vehicle project and found out that these organisations are not applying sustainability assessment modelling to their engagement with electric vehicles or other such initiatives. The organisations seem to be either just paying lip service to the issue of sustainability, or they are in a transitional stage of their sustainability effort, or don't see the need for appropriate social accounting technologies such as sustainability assessment modelling.

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1 Background to the study

1.0 Introduction

Concerns about climate change and energy security, along with advances in battery technology, have stimulated a renewed interest in electric vehicles (Hidrué, Parsons, Kempton and Gardner, 2011). The present UK transport regime, predominantly the ownership of petrol/diesel powered cars, is environmentally unsustainable. Twenty-four per cent of carbon emissions in the UK are attributable to the transport system (DECC, 2010) and United Kingdom targets call for at least eighty per cent reduction in carbon emissions by 2050. Efforts at achieving the carbon emissions target in the UK by 2050 without a decarbonisation of the transportation system would be daunting.

In as much as there are several possible replacements for the Internal Combustion Engine (ICE), the technology readily available for deployment are the battery-powered electric vehicle. The UK government has announced the provision of £400 million to support measures designed to promote the uptake of a next-generation of ultra-low emission vehicle technologies. As part of the Plugged-In Places (PIP) scheme, the UK government co-funded the roll-out of around 9,000 charge points by March 2013 in London, the North East and Milton Keynes, Scotland, Northern Ireland, Manchester, the Midlands and the East of England. The lessons learned during this programme will influence plans for a national charging network. Additionally, the government has provided a plug-in grant to reduce the purchase cost of eligible pure-electric, plug-in hybrid and hydrogen cars by twenty-five per cent (to a maximum of £5,000).

Businesses and organisations are a large purchaser of cars and light vehicles and are a key part of the market for innovative automobile technologies. Potter and Atchulo (2013) indicate that

company cars have formed a major part of new car registrations in the UK since the 1970s.

This study makes the corporate sector the focus of its research. Organisational actors provide the researcher with a manageable population to study. Gray (2011) indicates that placing corporations (organisations) at the heart of the sustainability debate seems entirely apposite since they are deeply and intrinsically implicated. The engagement of businesses and organisations with electric vehicles can therefore go a long way to see to the uptake of innovative automobile technologies such as electric vehicles.

The sustainability rhetoric has been embraced by many organisations as observed by Gond, Grubnic, Herzig and Moon (2012). However they indicate that there is little known about a deeper integration of management control systems and sustainability. An engagement of businesses and organisations with electric vehicles would mean that such an engagement would be taken through some form of assessment within the organisation. Gray (2011) and Hopwood, Unerman and Fries (2010) argue that conventional accounting neglect corporate sustainability issues and this leads to distorted information being provided as a basis for decision-making.

Burritt and Schaltegger (2010) indicate that sustainability accounting research should be oriented towards improving management decision-making. Bebbington, Brown and Frame (2007) acknowledge the deficiencies that come with the use of conventional accounting as a basis for decision-making particularly regarding sustainable development initiatives. They indicate that sustainability assessment modelling is a better assessment tool for sustainable development initiatives.

1.1 The Milton Keynes Electric Light Vehicle InfraStructure 'ELVIS' project

This research draws upon participants in the Milton Keynes Electric Light Vehicle InfraStructure 'ELVIS' project. The project is part of the wider Milton Keynes low-carbon living programme towards energy and environmental challenges. It is aimed at supporting the widespread uptake of electric cars and vans with a target of 1,000 electric cars on Milton Keynes' roads by 2014. This project began in 2010 and has provided an opportunity to conduct the research with some of the organisations engaging with electric vehicles.

When organisations (businesses) want to engage with an initiative or programme, these initiatives are normally taken through an assessment. An initiative or programme is either accepted or rejected based on whether it meets established criteria. This chapter proceeds with an overview of the literature concerned, the purpose of the research and research questions and the structure of the study.

1.2 Overview of literature review

A review of the existing literature on management control systems/performance measure systems and sustainability control systems was undertaken to establish the purpose of this study and develop researchable questions that will be addressed with the data that is gathered from the participating organisations, as well as to give the research a sense of direction. In doing so, the various types of management control systems and sustainability control systems used by organisations are discussed. This is done drawing extensively on the work of Ittner and Larcker (1998), Otley (1999), Speckbacher, Bischof and Pfeiffer (2003), Tuomela (2005), Broadbent and Laughlin (2009) as well as Franco-Santos, Lucianetti and Bourne (2012).

A decision-making tool regarding the uptake of vehicles that has diffused into practice and provided by Deloitte Car Consulting is examined. This is because this tool has the semblance of a management control system specific for an assessment of an engagement or uptake of vehicles by organisations.

An examination of the attempts that have been made to develop tools and practices for the assessment of initiatives that have a considerable social and environmental content such as an engagement with electric vehicles is also done. This was mostly around the work of SustainAbility (2001), Lingane and Olsen (2004), Burritt and Schaltegger (2010), and particularly Bebbington et al. (2007) and Fraser (2012).

Gond et al. (2012) particularly highlight various paths towards sustainability integration or marginalisation within organisations. In as much as they consider integration as a continuum, they delineate eight organisational configurations relating to integration of management control systems and sustainability control systems. This is looked at in reviewing the literature.

1.3 Purpose of research and research questions

There have been calls for the need to develop tools that are appropriate for the assessment sustainable development initiatives such as an engagement with electric vehicles. Bebbington et al. (2007), Hopwood et al. (2010), Burritt and Schaltegger (2010), Gray (2011) and Fraser (2012) all acknowledge the inadequacies that come with the use of conventional accounting techniques. Bebbington et al. (2007) particularly propose sustainability assessment modelling as an appropriate social accounting technology for assessing sustainable development initiatives.

Following from the literature that has been examined in Chapter 2 of this thesis for this study, the following has been identified as the central question that this study seeks to address:

How do the participating organisations in this study assess sustainable development initiatives, particularly regarding electric vehicles?

This study specifically seeks to address the following areas:

- I. To what extent is sustainability embedded in the strategy of participating organisations that are engaging with electric vehicles in accordance with the configurations of Gond et al. (2012)?
- II. Is sustainability assessment modelling applied by the participating organisations for their engagement with electric vehicles as indicated by Bebbington et al. (2007) and Fraser (2012)?
- III. In the event that sustainability assessment modelling is not applied by the participating organisations, what techniques are used? What social and environmental costs/benefits are considered?
- IV. How are these social and environmental costs/benefits measured?

1.4 Research methodology

This study uses six organisations participating in the Milton Keynes Electric Light Vehicles InfraStructure ‘ELVIS’ project to examine the research question indicated in Section 1.3 above. The Open University’s participation in the ‘ELVIS’ project provided access to these organisations. The number of participants was limited, but they do represent a good range of organisations and contexts in which electric vehicles were being considered. Though this

approach has its limitations with respect to the generalisation of the findings, according to Yin (2003) and Flyvberg (2006) it is appropriate for explorative research.

The study makes extensive use of data collected from detailed interviews and corporate communications. This provides not just an explanation of what seems to be going on regarding the incorporation of social and environmental factors into decision-making, but an abductive logic of enquiry is employed to provide an unfolding and uncovering of what is likely to be going on. This is done by the adoption of the institutional theory provided by Dillard et al. (2004) as the main building blocks for the analysis of the data gathered. This provides an opportunity to explore whether sustainability assessment modelling as described by Bebbington et al. (2007) was applied by the participating organisations in assessing their engagement with electric vehicles. The framework provided by Dillard et al. (2004) acknowledges macro, organisational field and organisational level factors that can influence accounting change and hence is useful for this study.

1.5 Structure of the study

This study consists of twelve chapters. Chapter 1 gives an overview of the entire study. Chapter 2 takes is a review of literature on management control systems/performance measurement systems and sustainability control systems with particular attention to embedding sustainability in strategy, and the incorporation of social and environmental considerations in decision-making, in this case the uptake of electric vehicles. The intention is to most importantly develop answerable research questions that are addressed at the end of the study.

Chapter 3 provides the theoretical framework on which the presentation, interpretation and analysis of the data gathered is based. Chapter 4 describes the methods used in the study for the purposes of data collection, presentation, interpretation and analysis as well as the logic of

enquiry employed. Chapter 5 is a presentation, interpretation and analysis of the data gathered from Skyline Taxis.

Chapter 6 is a presentation, interpretation and analysis of the data gathered from Arup and Chapter 7 is the data presentation, interpretation and analysis for the Milton Keynes Council. Chapters 8–9 are about the data presentation, interpretation and analysis, for Fleetdrive and Home Retail Group, respectively. Chapter 10 is a report on the work of the Energy Savings Trust (EST). Chapter 11 is a discussion and findings of the study and Chapter 12 presents the summary, conclusions and recommendations of the study.

2 Literature review

2.0 Introduction

This chapter undertakes an examination of the existing literature on the subject of management control systems or performance measurement systems which are used interchangeably in the literature. The purposes these systems serve in organisations are reviewed. A management control tool that has diffused into organisations for the assessment of company cars including electric vehicles is also explored. The chapter continues with a consideration of sustainability control systems, the purpose they serve in organisations as well as the limitations to their usage in organisations, and the relationship between management control systems and sustainability control systems.

The third part of this chapter is an examination of the attempts that have been made to develop tools and practices for the assessment of initiatives that have a considerable social and environmental content such as an engagement with electric vehicles. In doing so, the following issues are examined:

- *Sustainability in financial appraisal*
- *Embedding sustainability in organisational strategy*
- *Embedding sustainability in decision-making.*

After examining these issues, the research questions and a summary and conclusion to the chapter are provided.

2.1 Performance Measurement Systems/Management Control Systems

Performance measurement systems have been extensively used interchangeably with management control systems in the literature. The initial efforts at the development of these tools aimed at measurement. They were later claimed to be management tools though authors such as Norreklit (2003) have had reservations about that. This thesis also uses these terminologies interchangeably.

Ahrens and Chapman (2002) indicate that performance measurement systems hold different meanings for different organisational members. However, the role of performance measurement systems in developing strategic plans as well as the measurement of organisational objectives has been well established in the literature. According to Ittner and Larcker (1998) performance measurement systems play a key role in developing strategic plans as well as evaluating the achievement of organisational objectives and compensating managers, (see also Broadbent and Laughlin, 2009).

Otley (1999) indicates that the performance of business (and other) organisations has long been of central interest to both managers and management accounting researchers. He however indicates that management accounting has tended to restrict itself to considering only financial performance or measurements, and to use frameworks and theories drawn primarily from the discipline of economics. According to Otley (1999), the discipline of economics does not provide a sufficiently rich picture of the internal activities of organisations to provide reliable

guidance to designers of management control systems. The characteristics and roles played by performance measurement systems as indicated by Ittner and Larcker (1998), Otley (1999), and Broadbent and Laughlin (2009) can largely be seen in the classification of the influence of performance measurement systems in organisations by Franco-Santos, Lucianetti and Bourne (2012).

The problem of management accounting being overly concerned with financial measures to the detriment of non-financial measures is strongly acknowledged by Ittner and Larcker (1998) when they argue that the perceived inadequacies in the traditional accounting based performance measures has brought about the evolution of a variety of performance measurement innovations ranging from “improved” financial metrics such as “economic value” measures to “balanced scorecards” of integrated financial and non-financial measures.

2.2 Types of Performance Measurement Systems/Management Control Systems

The observations of Ittner and Larcker (1998) as indicated in section 2.1 above, points to the fact that performance measures can broadly be categorised into two forms:

- *traditional accounting based measures;*
- *integrated financial and non-financial measures.*

Tuomela (2005) describes performance measurement systems as a collection of financial and/or non-financial performance indicators that managers use to evaluate their own or their unit's performance or the performance of their subordinates. This description of performance

measurement systems is similar to that provided by Franco-Santos, et al. (2012) that emphasises the usage of both financial and non-financial measures.

The definition of performance measurement systems by Tuomela (2005) when linked to the observation of Ittner and Larcker (1998) leads to the broad classification of performance measurement systems into traditional accounting based measures and integrated financial and non-financial measures. This broad classification of performance measurement systems is also acknowledged by Franco-Santos et al. (2012)

2.2.1 Traditional accounting based measures

According to Speckbacher et al. (2003), traditional performance measurement is based on two important assumptions in an accounting model:

- 1) That all relevant information on performance can be expressed through financial measures;
- 2) By a linear additive model, the value chain process can be described (and managed).

Though not exactly as performance measurement systems widely mentioned in the literature such as budgeting and costing, a management tool that has diffused into practice for the assessment of the vehicles (electric vehicles inclusive), is the Deloitte car consulting model. The model follows the assumptions of traditional performance measurement as indicated by Speckbacher et al. (2003). The assumption that all relevant information can be expressed through financial measures is particularly followed by the model. A modified version of the model as indicated in Chapter 9 is used in Home Retail Group for the assessment of the uptake of company cars and is in widespread use by corporate fleet managers throughout the UK.

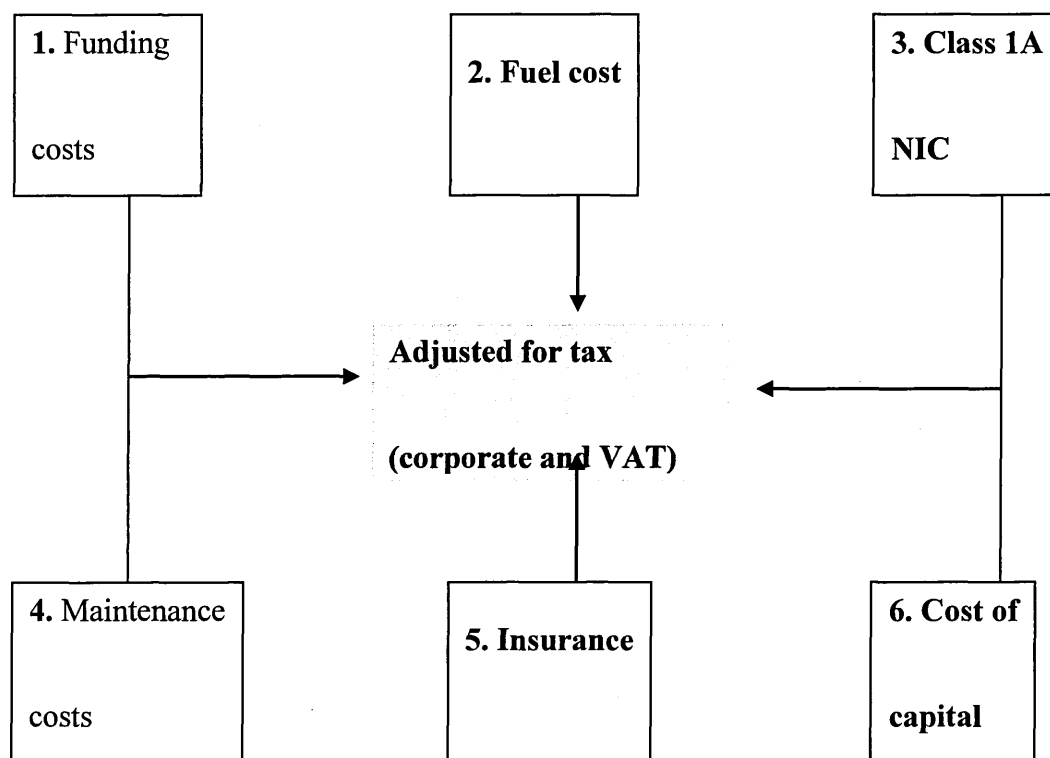
According to Deloitte Car Consulting (2012), in assessing the uptake of company cars employers seek to:

- identify savings for the business;
- determine the most cost effective way of acquiring and running vehicles;
- determine employer savings if the current fleet were operated on a total cost of ownership basis;
- enhance employee choice and satisfaction while managing total cost ownership;
- set cash allowance levels and help reduce the cost of paying these, and
- identify optimum car and allowance scheme design.

Though the above objectives of assessing the uptake of company cars by organisations does not mention social and environmental considerations, Deloitte Car Consulting (2012) indicate that concerns relating to health and safety legislation, corporate social responsibility and the ‘green agenda’ are causing many employers to consider implications other than cost in making changes to policies around car allowance provision and vehicle choice. This study is particularly interested in how organisations take into account these factors which are not a part of the model that Deloitte recommends for the assessment of company cars.

Deloitte Car Consulting’s model of total cost of ownership incorporates funding costs, fuel costs, class 1A national insurance contribution, maintenance costs, insurance, and cost of capital. It is represented in Figure 2.1.

Figure 2.1 Deloitte Car Consulting model of total cost of ownership (TCO)



Source Deloitte Car Consulting 2012.

2.2.2 Advantages of using traditional accounting based measures

Tuomela (2005) indicates that financial measures are well suited for certain circumstances as well as for interactive use to stimulate discussion about different strategic uncertainties and how to deal with them. Electric vehicles have not been part of company car choices available to employees. A traditional accounting based measure as indicated by Tuomela (2005) could be well suited for assessment of an initiative for companies to engage with electric vehicles.

According to Tuomela (2005), financial measures are used to assess whether the intended strategy leads to the attainment of financial goals. He further states that accounting based performance measures are predominant because they are relatively objective, reliable and

verifiable. This assertion is attributable to the fact that accounting based measures are “hard” measures and there is no room for subjectivity. Another advantage of using accounting based performance measures identified by Tuomela (2005) is the low cost of implementing these measures as well as their ability to meet external reporting while serving internal requirements at the same time.

2.2.3 Limitations of the usage of traditional accounting based measures

The assumptions identified by Speckbacher et al., (2003) in 2.2.1 above inherently have certain problems which results in traditional accounting based measures having some setbacks (Ittner and Larcker, 1998 and Tuomela, 2005) in their usage as measurement tools. Firstly, the assumption that all relevant information can be expressed through financial measures does not work in the real world in which organisations operate. “Soft” issues such as customer satisfaction and employee motivation are rarely measured financially. The assumption of the value creation process being described (and managed) by a linear additive model is invalid, since organisations operating in the real world have considerable amounts of factors that makes such an assumption too great simplification. A linear relationship would validate a cause-and-effect relationship, which though plausible is not realistic. This follows the argument of Merchant (1985) that traditional accounting based measures are myopic.

Ittner and Larcker (1998) share the misgivings of Johnson and Kaplan (1987) who had earlier argued that traditional accounting based measures are too late, too aggregated, and too distorted for sound decision-making. They argue that such measures are too historical and backward looking, lacking predictive ability, rewarding short-term or incorrect behaviour, being too aggregated and summarised to guide managerial action, reflecting functions instead

of cross-functional processes, and providing inadequate guidance to evaluate intangible assets. The possible suitability of traditional accounting based measures for the assessment of electric vehicles as indicated in section 2.2.2 is challenged by the arguments of Ittner and Larcker (1998). This study examines whether in practice these measures are used or otherwise for the assessment of social and environmental initiatives in this instance an engagement with electric vehicles.

The disadvantages identified by Ittner and Larcker (1998) form the basis for them stating that the perceived inadequacies in the traditional accounting based performance measures have motivated a variety of performance measurement innovations ranging from “improved” financial metrics such as “economic value” measures to “balanced scorecards” of integrated financial and non-financial measures.

As to whether the drift towards a variety of performance measurement innovations, particularly the use of measures that take into account social and environmental considerations is what pertains in the participating organisations is a subject of exploration of this study. The next section examines non-financial measures which Ittner and Larcker (1998) and Tuomela (2005) argue are a response to the identified inadequacies of the traditional accounting based measures.

2.2.4 Non-financial measures

To circumvent the shortcomings of financial measures, Merchant (1985) proposes the use of non-financial measures. Tuomela (2005) states that unofficial summary reports of non-financial measures have been used by operational professionals to supplement accounting

information for several decades, and that the first official report on non-financial measures by the accounting profession was prepared almost three decades ago. This shows that the use of non-financial measures is not a recent idea. The consideration of non-financial measures when measuring performance is not such a novel area of performance measurement as Kaplan and Norton (1996) would suggest. Though attempts were made in the past to take into consideration non-financial measures when measuring performance, it was Kaplan and Norton who formalized and propagated extensively the use of non-financial measures in performance measurement with the introduction of the balanced scorecard.

2.2.5 Advantages of using non-financial measures

Though many authors such as Ittner and Larcker (1998) have indicated some advantages that come with the use of non-financial measures, Tuomela (2005) does this more comprehensively. Firstly, he states that non-financial performance measures make it possible to follow progress in the key strategic success factors. He goes on to add that interactive analysis and discussion of the most critical success factors in management meetings could be enhanced by this information.

Additionally, he states that non-financial measures can be used to support core values and to accentuate the strategic boundaries. He goes on to add that while financial measures address the importance of creating value for owners and the avoidance of excessive financial risk, non-financial measures could be used to emphasise a wide range of values and to strengthen different kinds of strategic boundaries.

2.3 Uses of integrated performance measurement systems

According to Speckbacher et al., (2003), the following benefits of the balanced scorecard (which is a combination of financial and non-financial measures) concept is particularly important:

- *improved company results in the long term;*
- *stronger consideration of non-financial drivers of performance, and*
- *supporting the shareholder value based management system.*

Speckbacher et al., (2003), observe that, most companies want to use such a measurement tool to communicate strategy at the top and middle management level and that only few companies are interested in applying such a tool for communicating strategy at the employee level. The use of integrated performance measurement systems by top managers to support decision-making at the strategic level is also emphasised by Henri (2006).

2.4 Problems in formulating and implementing integrated performance measurement systems

In as much as it seems ideal to use measurement systems that integrate financial and non-financial measures, Rouse, Putterill and Ryan (2002) note that it is not an easy task to formulate integrated performance measurement systems. Several interrelated issues appear to be barriers to their development and implementation. Speckbacher et al. (2003), indicate that the contingency theory literature suggests that there is a relationship between the size of an organisation and the design and use of management control systems. They add that as a broader set of information and measurement issues arises in larger firms, and more advanced and sophisticated management accounting systems are required.

The first problem to the development and implementation of integrated performance measures that Speckbacher et al. (2003) identify is the propensity for the list of measures to increase when there are no bounds imposed. This is also acknowledged by Cavalluzzo and Ittner (2004) when they also identify the problem of not only the selection of relevant indicators but also the interpretation as well. A technical issue they also identify is the ability to define and assess metrics that capture desired actions and outcomes. With reference to a survey of private sector measurement practices, they observe that the identification and measurement of appropriate performance metrics is a significant impediment to integrated measurement system success.

Secondly Rouse et al. (2002) as well as Cavalluzzo and Ittner (2004) specifically point out the difficulty in identifying the need for financial indicators but also non-financial indicators to accommodate the various requirements of stakeholders simultaneously. Arguably, the balanced scorecard as an integrated performance measure seems to accommodate the diverse management tasks of various stakeholders, though Norreklit (2003) has her reservations about that.

Another impediment to integrated performance measurement success is the possibility of too much emphasis on a particular indicator to result in 'dysfunctionality' which Rouse et al.(2002) and Cavalluzzo and Ittner indicate as employees ignoring the underlying processes and concentrating on measurements.

Taken to the extreme, this identification and implementation challenge opens the way for the measurement process to become political with dysfunctional instances resulting in possible

weakened goal congruence. The issue of weakened goal congruence arises when the situation which Cavalluzzo and Ittner (2004) describe as the difficulty in achieving management commitment to new measurement systems arise. When this issue of weakened goal congruence occurs in formulating integrated performance measurement systems then inherently the performance measurement system would have a setback comparable to what Ittner and Larcker (1998) identify as a drawback of the usage of traditional accounting measures as reflecting functions instead of cross-functional processes.

Cavalluzzo and Ittner (2004) state that accounting researchers argue that the success of management accounting innovations should also be a function of the existing information systems capabilities. They add that surveys of performance measurement innovations in the private sector indicate that information system problems represent a major impediment to implementation success of innovative integrated measurement systems. Many of these problems relate to the ability of existing information systems to provide required data in a reliable, timely, and cost effective manner. They also state that the use of data collected by other organisations (e.g. state and local agencies, and non-governmental recipients) which come with deficiencies compounds the information system problems of organisations. There are difficulties in ascertaining the accuracy and quality of such data.

Apart from management commitment discussed earlier which Cavalluzzo and Ittner (2004) identify as an impediment to the successful design and implementation of performance measurement innovations, decision-making authority and training are other issues they identify at the organisational level. Additionally, they note that management support for an innovative system is crucial to implementation success. This is because managers can focus resources on

initiatives they deem worthwhile. Top management support is therefore an important ingredient to the design and implementation of an innovative measurement system according to Cavalluzzo and Ittner (2004). They suggest that managers who believe innovative measurement systems can support their decision-making activities are more likely to implement and use the measures. Conversely, managers who lack the authority to make decisions based on the new information will have little reason to embrace the innovation. This tie in with what Clark (2005) observed as a third and subtler way organisations fail with their change initiative. When managers lack the authority to make decisions based on the new information, it is perceived to have a high personal cost and they would not be motivated to embrace such a change initiatives.

Management accounting practitioners and academics put increased emphasis on the balanced scorecard, which is one of the performance measurement systems that make use of financial and non-financial measures. Norreklit (2003) acknowledges this when she states that the balanced scorecard receives much attention. She however wonders if it was because of a new and convincing theory or merely a persuasive rhetoric. She concludes that the text is not as convincing as persuasive.

Similar to Norreklit (2003), Clark (2005) raises concerns about the attention that new performance measurement systems (like the balanced scorecard) are receiving. He also states the failure patterns he observed is frequently starting and stopping change, and attempting too much change at once. Cavalluzzo and Ittner (2004) also noted that institutional theory suggests a factor that is particularly relevant to implementation success in government organisations:

whether the implementation of the performance measure innovation is in response to legislative mandates or requirements.

2.5 Sustainability control systems

Roth (2008) indicates that companies are currently using cost management tools that can be modified to include environmental and social dimensions which are somewhat a departure from traditional management control systems. Similar to the observations of Ittner and Larcker (1998) and Tuomela (2005) regarding traditional accounting based measures, Roth (2008) indicates that the cost management tools that are being modified as described above, were originally developed to align organisational and behavioural structures with the economic goals of organisations and to assist in improving economic performance. The modification of these management tools to take into account social and environmental dimensions for managing and reporting sustainability impacts are what Gond, Grubnic, Herzig and Moon (2012) refer to as sustainability control systems.

The modification of traditional accounting based management control systems as described by Roth (2008) to take into account social and environmental considerations to become sustainability control systems as indicated by Gond et al. (2012) is synonymous to the incorporation of non-financial measures into traditional accounting based measures to become integrated performance measurement systems as described by Tuomela (2005) and Franco-Santos et al. (2012).

2.5.1 The purpose that sustainability control systems serve in organisations

Gond et al. (2012) point that the purpose(s) of traditional management control systems have their corresponding purpose(s) in sustainability control systems. These purpose(s) include:

- *strategic planning*

- *budgeting*
- *financial measurement systems*
- *non-financial measurement systems*
- *hybrid measurement systems*
- *project management and*
- *evaluation and reward*

2.5.2 Barriers to the use of Sustainability Control Systems in organisations

Inasmuch as the use of sustainability control systems is desirable, Gond et al. (2012) as well as Roth (2008) acknowledge that there are barriers to their use in organisations. Some of these barriers or impediments they enumerate as;

- *incompatibilities of measurement systems*
- *organisational silos and stretch*
- *insufficient investment in the sustainability side, and*
- *under-developed key performance indicators (KPIs)*

The impediments enumerated by Roth (2008) and Gond et al. (2012) are largely similar to the factors that serve as impediments to the design and implementation of integrated performance measurement systems as indicated by Rouse et al. (2002), Speckbacher et al. (2003) and Cavalluzzo and Ittner (2004).

2.5.3 The relationship between management control systems and sustainability control systems

Gond et al. (2012) point out that management and sustainability control systems are often operated by different groups within the organisation. However, they go on to emphasise that it is of utmost importance that sustainability is integrated within management control rather than simply relying on discourse to deliver triple rather than single bottom line.

The modification of traditional accounting based measures into sustainability control systems being similar to the incorporation of non-financial measures into traditional accounting based measures as described in section 2.6 above does not mean these systems are necessarily integrated. As indicated by Gond et al. (2012) their integration is what is likely to produce the results for which they were set up. They provide a framework that shows ideal-type configurations of integrating sustainability. This chapter continues with a presentation of these configurations.

2.6 Embedding sustainability into organisational strategy

Gond, Grubnic, Herzig and Moon (2012) indicate that though organisations have embraced the sustainability rhetoric in their discourse and external reporting, little is known about the processes whereby management control systems contribute to a deeper integration of sustainability within organisational strategy. They provide a configuration of different ideal-types of integrating sustainability.

Gond et al. (2012) highlight various paths towards sustainability integration or marginalisation within organisations. They are of the view that management control systems shape actors' practices and can, if used appropriately, push organisations in the direction of sustainability. To avert the situation where sustainability control systems remain peripheral and decoupled from core business activities and fail to reshape strategy, Gond et al. (2012) argue that

sustainability control systems can contribute to an effective integration of sustainability only when they inform management control systems.

Key to their argument is the uses and integration of management control systems and sustainability control systems. They distinguish between diagnostic control systems used by executives to correct actors' actions and interactive control systems used to focus actors' attention on key goals and support changes aligned with higher strategic objectives. According to them, integration is the degree of overlap between the two types of control systems. They indicate further that interactive control systems involve dialogue between top managers and subordinates in an effort to stimulate organisational learning and development of new strategic initiatives. According to Gond et al. (2012) the link between interactive control and strategy-making is its usage to scan the environment and by implication, inform strategic positioning. On the other hand, according to them diagnostic controls are used as tools for the correction of actors' actions to align activities towards the achievement of critical success factors.

Based on a criterion of relevance to contemporary organisations and an extensive literature review spanning forty years, Gond et al. (2012) put forward a set of management control systems and sustainability control systems that derive from them. This is shown in Table 2.1 below:

Table 2.1

Management control systems used by top managers and corresponding sustainability control systems.

Management Control Systems	Description of the management control systems	Examples of sustainability control systems deriving from the accounting control systems
Strategic planning	Long-range planning covering a five – ten year period (based upon forecasts of competitive environments).	Sustainability planning (Bonacchi and Rinaldi, 2007)
Budgeting	A plan specifying goals to be achieved in the next year; incorporates initial preparation and on-going revisions and updates.	Environmental budgeting (Burritt and Schaltegger, 2001); Sustainability budgeting (Roth, 2008)
Financial measurement systems	More specific financial information than that contained in the budget (includes information such as Return on Investment (RoI) and Economic Added Value (EVA))	Environmental/Material cost accounting systems (Herzig et al. 2012) and Wagner and Enzler, 2006)
Non-financial measurement systems	Measurements expressed in non-financial terms (e.g. introduction of new products, market positioning).	Environmental performance evaluation systems (Dias-Sardinha et al. (2002), Materials and energy flow accounting systems (Herzig et al. 2012 and Wagner and Enzler, 2006).
Hybrid measurement systems	A set of financial and non-financial indicators to assess the achievement of strategic objectives (e.g., balanced scorecard, tableaux-de-bord)	Sustainability performance measurement (Schaltegger and Wagner, 2006), Sustainability balanced scorecard (Figge et al. 2002 and Hubbard, 2009).

Project management	Review of discrete blocks of organisational activity intended to ensure delivery to time and budget (e.g. to improve project attributes)	Socio-eco-efficiency analysis (Schmidt et al. 2004), Environmental investment appraisal (Burritt et al. 2009)
Evaluation and reward	To direct the efforts of individuals and groups within an organisation (e.g., bonus payment)	Reward system based on multidimensional performance system (Dutta and Lawson, 2009)

Source: Gond et al. (2012), pg. 208

According to Gond et al. (2012), despite the recent development in hybrid and non-financial measurement systems and financial and non-financial information considered equally important for both strategy deployment and development as discussed earlier in this chapter, the traditional management control systems are seen to be limited in incorporating the interests of a broad range of stakeholders and in addressing environmental and social issues. According to them, the development of the various sustainability accounting systems indicated in column 3 of the above table derived from the large body of literature on environmental management accounting and eco-control seeks to rectify the limitations of the traditional management control systems.

Gond et al. (2012) indicate that little research has investigated the interplay of sustainability control systems with regular management control systems, the improvements in decision-making created through better integration and how to overcome organisational barriers preventing integration. They indicate that embedding stakeholder expectations and sustainability issues within strategy calls for a closer look at the interplay between management control systems and sustainability control systems and how organisational moves towards more sustainability can be enhanced by strategic and simultaneous mobilisation of both systems.

Gond et al. (2012) indicate how management control systems and sustainability control systems can be integrated. According to them, 'technical integration refers to the necessity of considering single practices of sustainability control within a broader system of management control,' (Gond et al. 2012, pg. 209). They add that this entails the integration of regular management control systems with activities and systems than can be described as internal sustainability management control but are dealt with outside the management control function of organisations. Organisational integration according to them 'refers to the organisational dimensions that may or may not underlie management control systems and sustainability control systems and point actors' practices in relation to both types of control systems,' (Gond et al. 2012, pg. 209). They indicate that apart from having regular and sustainability management control, integrating sustainability into management control is something people actually do.

Cognitive integration according to Gond et al. (2012) is when regular and sustainability control systems can also be viewed as communication platforms that facilitate interaction and create opportunities for discussion between people with different patterns of thinking, mindsets and practical viewpoints with regard to sustainability.

Though Gond et al. consider integration as a continuum variable that reflects an aggregated level of technical, organisational and cognitive integration, they also highlight the challenges of moving from one configuration to another. They delineate eight organisational configurations relating to integration of management control systems and sustainability control systems and their uses. These are shown in table 2.2 below:

Table 2.2
Configuring uses and integration of control systems.

Uses of control systems (diagnostic vs. interactive)					
		Diagnostic use of MCS		Interactive use of MCS	
		Diagnostic use of SCS		Interactive use of SCS	
Level of control systems' integration (Cognitive, organizational, technical)	Low	Configuration A Dormant decoupled strategy Stability: Low Frequency: Low TBL: Low	Configuration B Strategy emergence through sustainability Stability: Medium Frequency: Low TBL: Medium	Configuration C Compliance-driven sustainability strategy Stability: High Frequency: High TBL: Medium	Configuration D Schizoid sustainability Strategy Stability: Low Frequency: Medium TBL: High (short term)
	High	Configuration E Dormant integrated strategy Stability: Low Frequency: Low TBL: Low	Configuration F Sustainability-driven organizational Strategy Stability: Low Frequency: Medium TBL: Medium	Configuration G Peripheral sustainability integration Stability: High Frequency: Medium TBL: Medium	Configuration H Integrated strategy Stability: High Frequency: Low TBL: High (long term)
sustainability		High Tight coupling			

SCS, sustainability control system; MCS, management control system; TBL, triple bottom line performance.

Adopted from Gond et al. (2012), pg. 211

Dormant decoupled strategy (Configuration A)

This as a ‘situation which the organisation possess parallel systems of control for management and sustainability, yet neither of them is actually mobilized to deploy any kind of strategy’, (Gond et al. 2012, p. 210). They indicate that this situation prevents the emergence of a clear strategy and the focus is on a diagnostic control system. This situation is typically characterised by no cognitive integration between both domains as well as low organisational and/or technical integration of management control systems and sustainability control systems preventing an emergence of a community of practice around systems. Importantly, organisations characterised by such a configuration are unlikely to reconcile environmental, social and economic performance.

Strategy emergence through sustainability (configuration B)

Movement from the ‘dormant decoupled strategy’ configuration consists in having a change in the use of the sustainability control systems. Particularly a movement from a diagnostic use of sustainability control systems to an interactive use brings about this configuration. In this situation, management control systems and sustainability control systems are still not integrated, but the sustainability system is mobilized strategically by the top management team to deploy a sustainability strategy.

Compliance driven sustainability strategy (configuration C)

This is a situation within which an organisation mobilises one of its management control systems to deploy its strategy, yet pays little attention to sustainability issues which are managed diagnostically through a system the operates parallel to the dominant management control system. Particularly this could be a situation where the development of a sustainability

control system is driven by external pressures to report on social and environmental issues. According to Gond et al. (2012), this type of configuration provides an important level of stability, except that the sustainability discourse and practice run the risk of being perceived as 'greenwashing'.

Schizoid sustainability strategy (configuration D)

This is where contradictory sustainability and traditional strategies are pursued and deployed through parallel management control systems and sustainability control systems. This situation can be characterised by low technical and organisational integration, and prevent cognitive integration of sustainability and strategy.

The first four configurations described above according to Gond et al. (2012) exhibit 'low integration' from a technical, organisational and/or cognitive viewpoint. They indicate that the next four configurations presented in this thesis exhibit 'high integration'. Here management control systems and sustainability control systems are strongly coupled and integrated through cognitive, organisational and/or technical processes.

Dormant integrated strategy (configuration E)

In this configuration both systems can be strongly tied from a technical, organisational or cognitive viewpoint but they are not necessarily mobilised to deploy any kind of strategy. Control systems are integrated in this situation either technically, organisationally or cognitively. This configuration is characterised with low level of stability, a low frequency and a low capacity to create a convergence between the various dimensions of performance. There is a higher prospect for sustainability strategizing compared to the 'dormant decoupled' situation.

Sustainability driven strategy (configuration F)

This is a situation in which the management control system is not used interactively and where the strategy-making is driven by sustainability through the interactive use of the sustainability control systems according to Gond et al. (2012). This is usually a characteristic of sustainable businesses at an early stage of development and there exists the opportunity to formalize and control sustainability related data and behaviour leading to an interactive use and the development of an integrated management control system as a by-product. This configuration's stability and frequency are both medium level.

Peripheral sustainability integration (configuration G)

This situation is where on the regular management control system is used interactively to deploy the strategy, the management of sustainability being used as a diagnostic tool. This situation corresponds to the approach of sustainability or social responsibility management where these responsibilities are regarded as external 'constraints' weighing on strategic choices rather than 'business opportunities'. This configuration is also likely to occur when the sustainability control systems are directly derived from a reporting system built to comply with external pressures and expectations. In this situation, social and environmental dimensions of performance may be viewed as low organisational priorities in contrast with financial dimensions.

Integrated sustainability strategy (configuration H)

This corresponds to an ideal-type of interactive use of both integrated systems. This is a situation where sustainability strategy and strategy-making overlap completely, allowing the deployment and renewal of a sustainability strategy through the use of coherent integrated

systems. Gond et al. (2012) add that theoretically such a configuration allows managers to derive process, service and product innovation from sustainability engagement. Also this configuration is stable as sustainability and commercial differentiation strategies may reinforce each other over time.

Gond et al. (2012) acknowledge that there have emerged alternative paradigms to financial profit maximisation captured in such phrases as the ‘triple bottom line’ where economic, social and ecological/environmental criteria are expected to be integrated. The economic imperative for businesses to act responsibly and embed social and environmental consideration into the way they are run is what Hopwood et al. (2010) refers to as the business case for embedding sustainability in decision-making.

There have been attempts at the development of tools specifically for the assessment of initiatives with a substantial social and environmental content, such as an engagement with electric vehicles. These tools have not necessarily diffused into practice and are discussed in the next sections of this chapter.

2.7 Sustainability in financial appraisal

The long-term survival of organisations and society as a whole being dependent on efficient environmental, social and economic management has been well established in the literature, see Bebbington et al. (2007), Hopwood et al. (2010), Fraser (2012) and Gond et al. (2012) .

Frequently, in the appraisal of organisational initiatives, social and environmental costs and benefits are either overlooked or there is no clear method involved. Burritt and Schaltegger (2010) indicate that conventional accounting continues to neglect corporate sustainability issues and leads to distorted information being provided to managers as a basis for decision-

making. This is supported by Gray (2011) when he states that there is a potential conflict between everything taught in accounting and business compared to a deep responsibility and a pursuit of sustainability. The prevalence of the above observations has resulted in what Gray (2006) describes as using the environment for income generating ventures when in actual fact it should be treated as capital.

Hopwood et al. (2010) agree with the observations of Ittner and Larcker (1998), Tuomela (2005), Burritt and Schaltegger (2010) as well as Gray (2011) that traditional business, financial and accounting practices and measures have tended to focus solely on the financial or economic outcome of business activities. Bebbington, Brown and Frame (2007) indicate that it has been widely recognised for the need to find tools that articulate the extent to which current activities are unsustainable. Such a need according to them is required at multiple layers, but they focus their study on the efforts of organisations to better understand sustainable development and particularly the use accounting technologies to inform their understanding.

Fraser (2012) indicates that social accountants have sought 'better ways' to change unsustainable organisational and social behaviours. These 'better ways' are largely attempts at remedying the shortcomings of traditional accounting based measures which Ittner and Larcker (1998), Tuomela (2005), Bebbington et al. (2007), Burritt and Schaltegger (2010), Gray (2011) and Gond et al. (2012) all recognise.

The difficulty that confronts the design and implementation of systems that take into account both financial and non-financial indicators as indicated in section 2.5 of this chapter is widely acknowledged by Rouse et al. (2002), Speckbacker et al. (2003) as well as Cavalluzzo and Ittner (2004). Similarly the consideration of social and environmental issues in organisational activities as social accountants have sought to do, (Bebbington et al. 2007, and Fraser 2012) is

not without difficulty. Hopwood et al. (2010) indicate that considering social and environmental issues in decision-making has increasingly been acknowledged by organisations, their managers and society as a significant challenge.

Though the development of tools that take into account social and environmental consideration does not come easy, Bebbington et al. (2007) indicate that such tools which they refer to as 'social accounting technologies' have been considerably discussed in the accounting literature as full cost accounting approaches.

The development of tools that take into account social and environmental considerations as indicated by Bebbington et al. (2007) and Fraser (2012) coupled with the recent attention given to social and environmental issues by governments and civil organisations implies that organisations cannot continue to ignore these factors in their organisational decision-making processes. This is what this study seeks to explore with the identified participating organisations in the Milton Keynes Electric Light Vehicle Infrastructure Project.

2.7.1 Attempts at incorporating social and environmental issues into decision-making

In previous sections of this chapter, it has been indicated that the development and implementation of tools or measures that take into account social and accounting considerations come with a series of challenges. However, organisations and particularly academics have attempted the development of tools that are specifically for assessment of initiatives that have a considerable social and environmental content. Some of the institutional efforts that have been made at the development of social and environmental tools to aid organisations in making decisions regarding social and environmental initiatives include; the Global Environmental Management Initiative, (1998) and the work of SustainAbility (2001).

The work of the Global Environmental Management Initiative (1998) was focused on the distinction between leading and lagging environmental performance indicators. The former comprise of quantitative and qualitative information which are expected to lead to improved environmental performance, while the latter indicate the result of existing environmental practices. This study has to do with an exploration of tools used by the participating organisations in making decisions regarding initiatives with a social and environmental content such as an engagement with electric vehicles. Leading indicators would more likely be useful to the study.

The work of SustainAbility (2001) on its part identified financial drivers of sustainability value creation which Hopwood et al. (2010) also identify. These drivers include: customer attraction, brand value and reputation, licence to operate, human and intellectual capital, innovation, and risk profile. The works of SustainAbility (2001) as well as Hopwood et al. (2010) recommend that these drivers should be taken into account in making a case for an engagement with a social and environmental initiative.

The business factors indicated by SustainAbility (2001) and Hopwood et al. (2010) which are characteristically similar to social and factors, though taken into account in performance measures such as the balanced scorecard (Kaplan and Norton, 1996), they are still hard to incorporate into conventional accounting models. This is mainly because of their subjective nature, and accounts for some reservations expressed by authors such as Norreklit (2003).

Costs are an important ingredient in decision-making in organisations. Attaching monetary values to the business factors indicated by Hopwood et al. (2010) and SustainAbility (2001) are very difficult, if not impossible. This does not work in favour of such an approach to

assessing an engagement with a social and accounting initiative. This accounted for the Researcher's opinion that such an approach is not appropriate for this study.

A term originating from return on investment as used by traditional investors is social return on investment which Lingane and Olsen (2004) provide as a tool to aid the appropriate assessment of initiatives with a considerable social and environmental content such as an engagement with electric vehicles. According to them the term 'sustainable' refers to being both economically viable and having a neutral or positive impact on the environment's ability to sustain itself and on the health and well-being of individuals, society, and communities. This definition of sustainability conforms to that of Hopwood et al. (2010) as well as that widely used in the sustainability literature.

The framework presented by Lingane and Olsen (2004) is exclusive of financial/economic return. This defeats their description of what sustainability entails as indicated above.

Moreover, such an approach is not characteristically similar to integrated measurement approaches as described by Speckbacker et al. (2003). It ends up having only a non-financial focus.

Having acknowledged the difficulty in the acquisition of relevant and accurate data for the purpose of determining social return on investment, Lingane and Olsen (2004) indicate that most managers run their businesses without full information about the impact of their operations on the environment and human well-being. In their attempt to account for the full impact of the operations of businesses on the environment and society in their framework, indicators such as the impact of business activities on individuals, employees, communities and society at large are considered. Attaching monetary values to such indicators are similarly difficult if not impossible as in the case of the approach recommended by SustainAbility

(2001) and Hopwood et al. (2010) indicated earlier. This makes the approach not particularly appropriate for this study.

As a remedy to the shortcomings of the framework they prescribe that social return on investment should not be used as the sole indicator for social performance just as return on investment is not used as the sole indicator for financial performance. Perhaps, the environmental and social performance indicators in the Global Reporting Initiative (GRI) 2005 could be used to complement social return on investment as presented by Lingane and Olsen (2004). The GRI has as its core principles:

transparency, inclusiveness, auditability, completeness, relevance, sustainability, context, accuracy, neutrality, comparability, clarity and timeliness.

As ideal as the core principles of the Global Reporting Initiative may seem, the problem of data measurability, accuracy and relevance,(as in the case of approaches recommended by SustainAbility (2001), Hopwood et al. (2010) as well as Lingane and Olsen (2004), cannot be overlooked. Additionally, the Global Reporting Initiative is predominantly a non-financial measure. Financial/economic measures do not form an integral part of the measurement. This renders it as an inadequate complement to social return on investment as envisaged.

The importance of the incorporation of social and environmental factors into decision-making is emphasised by Luft (2009) when she states that selected non-financial information can be used both to substitute for and to complement accounting information. When social and environmental indicators are incorporated into the decision-making process, organisational initiatives with a strong social and environmental content would be appropriately assessed.

Bebbington et al. (2007) indicate that within ecological economics, the need for new approaches to decision-making to support sustainable development initiatives has been recognised. The need for development of these new decision-making approaches is not restricted to ecological economics alone. Fraser (2012) also indicates that as a result of the deficiencies associated with mainstream accountings, social accountants have sought 'better ways' and 'new imaginings' in order to change unsustainable organisational and social behaviours, (Fraser 2012, pg. 508). An engagement with electric vehicles by organisations is a sustainable development initiative and their uptake could benefit from new decision-making approaches recognised by ecological economics and social accountants.

Bebbington et al. (2007) acknowledge that the use of cost-benefit analysis for the assessment of sustainable development initiatives come with several limitations that they indicate include; over-reliance on monetization, subjectivity of calculations, politics of cost-benefit-analysis, distributional issues, reliance on experts and accounting as an alternative. The challenges of the use of cost-benefit analysis for the assessment of sustainable development initiatives are similar to the challenges that have been indicated earlier that encounter the application of the approaches proposed by Lingane and Olsen (2004) and Hopwood et al. (2010).

Bebbington et al. (2007) elucidate some of the developments within accounting that are geared towards supporting decision-making regarding sustainability initiatives. Fraser (2012) also identifies some of these developments to these new technologies to include full cost accounting and sustainability cost calculations which are internally focused tools as opposed to sustainability reports and triple bottom-line reports which are externally focused. The internally focused tools are largely performance measurement systems or management control systems as described in the beginning of this chapter. By taking into account sustainability

issues these internally focused tools are integrated performance measures as described in section 2.4 of this thesis.

Particularly, Bebbington et al. (2007) propose sustainability assessment models as a replacement for cost-benefit analysis in the assessment of sustainable development initiatives to which Fraser (2012) also concurs. They indicate that these models are an introduction of decision support tools for organisations and organisations seeking to perform sustainable development evaluations. They note that the sustainability assessment models seek to capture information on the wider impacts of organisational activities, decision-making and potentially accountability processes. The capturing of the wider impacts of organisation's activities as indicated by Bebbington et al. (2007) and Fraser (2012) largely includes the elements Lingane and Olsen (2004) and Hopwood et al. (2010) indicate should be taken into account when making decisions regarding social and environmental initiatives.

Unlike the approaches of Hopwood et al. (2010) and Lingane and Olsen (2004), the sustainability assessment modelling described by Bebbington et al (2007) which focuses on efforts by organisations and stakeholder groups to understand sustainable development impacts and the use of accounting technologies at the organisational level, has been empirically studied as in Fraser (2012). Sustainability assessment modelling meets the call of Thompson and Bebbington (2005) for social and environmental accounting to take stakeholder engagement seriously to give it a polyvocal citizenship perspective.

This particularly fits in with the institutional framework described by Dillard et al. (2004) that recognizes macro factors, the organisational field and intra-organisational imperatives in the analysis of accounting change. It is noteworthy however that the call by Thompson and Bebbington (2005) for the assessment of sustainable development initiatives to be done from a

polyvocal citizenship perspective and also acknowledged by Frame and O'Connor (2011) could possibly degenerate into a cacophony since an ad hoc plethora of indicators could be considered when using sustainability assessment modelling due mainly to its propensity to accommodate a variety of views on sustainable development initiatives.

Bebbington et al. (2007) indicate that sustainability assessment modelling in the UK was designed by BP (UK) and the University of Aberdeen as a full cost accounting approach to make previously external costs more central to organisational decision-making and that similar sustainability accounting models have been applied in other industries as well as in New Zealand. The work of Fraser (2012) was particularly focused on sustainability accounting modelling applications ranging from large infrastructure projects to libraries in a New Zealand local council setting. Bebbington et al. (2007) indicate that sustainability accounting modelling typically follows four generic full cost accounting steps:

- *Financial flows*
- *Resource usage*
- *Environmental impacts*
- *Social impacts*

Financial flows are the economic benefits that accrue from the project to the economic entity and its stakeholders. Resource usage captures the values of resources used to the extent that payments fail to account for their use. Environmental impacts are issues that arise from environmental damage through economic activities. Social impacts capture both positive and negative aspects of; indirect employment associated with a project, offset by deaths and

accidents arising during employments above the entity costs as well as contributions to create a socially sustainable society and benefits of products or other inputs of the project.

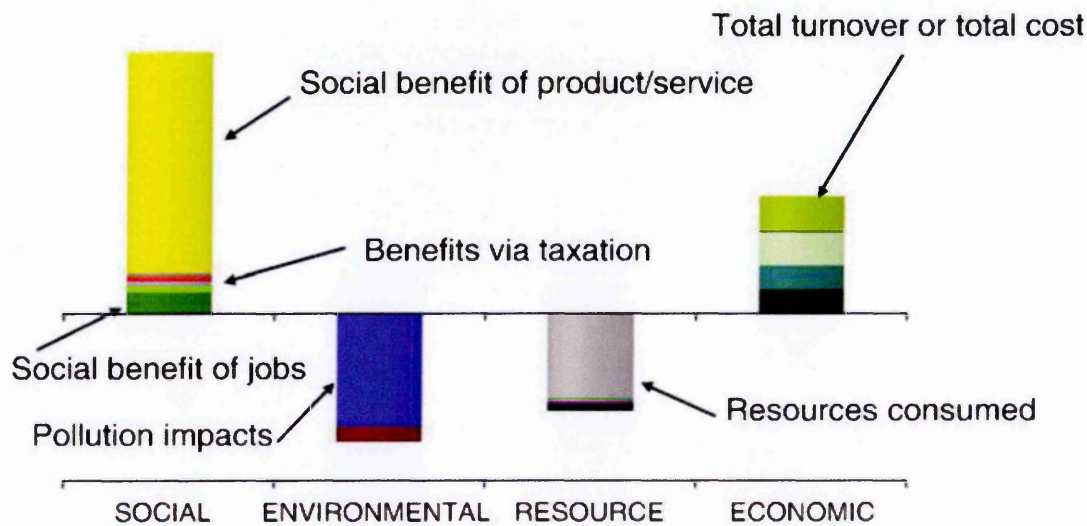
This approach to decision-making described by Bebbington et al. (2007) as well as Fraser (2012) goes beyond the elements that Hopwood et al. (2010) argue should be taken into account in making decisions regarding social and environmental initiatives such as the uptake of electric vehicles. The approaches indicated by SustainAbility (2001), Lingane and Olsen (2004) and Hopwood et al. (2010) unlike the sustainability assessment modelling approach described by Bebbington et al. (2007) and Fraser (2012) do not explicitly take into account costs associated with an engagement with a sustainable initiative such as the uptake of electric vehicles.

For practical application of sustainability assessment modelling, Fraser (2012) identifies four main steps. These are:

- *identification of the controllable activities and definition of the project; identification of the full life-cycle of activities recognized and the boundaries of the model defined;*
- *collection of activity data and categorizing into economic, resource use, environmental, and social, and*
- *monetizing the activities and externalities in each category.*

Having gone through the above mentioned steps, Fraser indicates that the data can be graphed to produce a ‘sustainability assessment model signature’ which Bebbington et al. (2007) demonstrate in the Figure 2.2 below:

Figure 2.2: Components of Sustainability Assessment Modelling, *Source: Bebbington et al. (2007), pg. 229, adopted from Baxter et al. 2004*



According to Bebbington et al. (2007) changes in economic, environmental and social capital categories result in financial and social benefits obtained at the expense of environmental and resource usage. They acknowledge that decisions about what elements to account for require contestable assumptions about what sustainable development entails and indicating that the need to be transparent about uncertainties, value judgments, assumptions and calculation methods is important.

Inasmuch as Bebbington et al. (2007) argue that sustainability assessment modelling is a better tool for decision-making involving sustainable development initiatives, they indicate that the model is not necessarily the introduction of an unquestionable decision-making tool but rather an alternative decision-making process that could vary depending on organisational and stakeholder perspectives. Dialogue and transformational ability are a key attribute of the model according to Bebbington et al. (2007).

Cost-benefit-analysis has a monetization attribute just as the approaches described by Lingane and Olsen (2004) and Hopwood et al. (2010). Bebbington et al. (2007) indicate that such an attribute is not entirely appropriate for the assessment of sustainable development initiatives. They however maintain that sustainability assessment modelling retains a qualified commitment to monetization. The maintenance of monetization according to them is against the background that economic rationalism still dominates management decision-making and ignoring this will most likely not serve to get the attention of managers who are predisposed to 'hard' financial calculation.

They however provide that the type of monetization associated with sustainability assessment modelling, unlike cost-benefit-analysis, does not attempt to compress impacts into a single value as way of seeking for an optimal solution. Inasmuch as a qualified commitment to monetization is acknowledged by Bebbington et al. (2007) in the usage of sustainability assessment modelling, Frame and O'Connor (2011) indicate that there still remain unresolved issues regarding money and non-money, quantitative and non-quantitative indicators.

Notwithstanding, the Researcher agrees with Bebbington et al. (2007) sustainability assessment modelling is a superior tool for the assessment sustainable development initiatives. This makes it a useful tool for this study.

Another issue with the usage of cost-benefit-analysis for the assessment of sustainable development initiatives is the recognition of subjectivity in calculations. Bebbington et al. (2007) identify this and largely overcome it with the proposition of sustainability assessment modelling. According to them, the model explicitly acknowledges that calculations are subjectively done based on the social constructionist nature of social and environmental accounting. They indicate that the purpose of sustainability assessment modelling is to

‘provide a relatively approximate glimpse into a projects sustainability profile’ (Bebbington et al. 2007, pg. 232).

Another important attribute of sustainability assessment modelling that Bebbington et al. (2007) indicate is the political dimension of decision-making. Their process explicitly recognizes this, unlike cost-benefit-analysis and similar approaches. They note that the model takes pluralism seriously by recognizing competing ideological perspectives and the significant power plays at work between the advocates of different ideological orientations. To forestall the occurrence of side-lining of minorities, Bebbington et al. (2007) suggest that interested parties can be involved at the early stages of the decision-making process. This is to establish an even playing field.

Also, Bebbington et al. (2007) indicate that distributional issues are not explicitly addressed by cost-benefit- analysis, but their model does so by taking into account impacts on, and gains/losses in each category of capital.

Since sustainability assessment modelling involves all significant stakeholders in a project, Bebbington et al. (2007) indicate that it overcomes the reliance on the views of a few experts as the case is with cost-benefit-analysis. The model calls for the collaborative efforts of decision makers, stakeholders and technical advisers. However, Bebbinghton et al. (2007) reiterate the need to draw on expert developed metrics. In the case of electric vehicles, the Deloitte model of total cost of ownership discussed earlier in this chapter is such a measure. It is used in industry for the assessment of the uptake of vehicles and could be improved by the incorporation of the ideals of sustainability assessment modelling.

The multi-dimensional attribute of sustainability assessment modelling as presented by Bebbington et al. (2007) is also acknowledged by Frame and O’Connor (2011). This comes in

the form of a deliberative multi-criteria multi-actor evaluation process. This study explores whether in making decisions regarding the engagement with electric vehicles, the participating organisations identified for this study adopted a sustainability assessment modelling approach.

2.8 Research questions

Following from the literature that has been examined for this study, the following has been identified as the central question that this study seeks to address:

How do the participating organisations in this study assess sustainable development initiatives, particularly regarding electric vehicles?

In addressing the above issue, the following sub-questions will also be addressed:

- I. To what extent is sustainability embedded in the strategy of participating organisations that are engaging with electric vehicles in accordance with the configurations of Gond et al. (2012)?
- II. Is sustainability assessment modelling applied by the participating organisations for their engagement with electric vehicles as indicated by Bebbington et al. (2007) and Fraser (2012)?
- III. In the event that sustainability assessment modelling is not applied by the participating organisations, what techniques are used? What social and environmental costs/benefits are considered?
- IV. How are these social and environmental costs/benefits measured?

2.9 Summary and conclusion

This chapter has examined management control systems and sustainability control system.

Additionally, attempts that have been made to develop tools that take into account corporate sustainability issues in decision-making have been examined.

The next chapter of this study presents the theoretical framework that will guide not only data gathering for the study but also the analysis and interpretation of the data that are presented in subsequent chapters.

3 Theoretical framework

3.0 Introduction

The previous chapter examined the literature on management control systems/performance measurement systems, sustainability control systems, and relationship between them. There was particularly an examination of attempts to develop tools or systems that take into account social and environmental consideration in decision-making. To study decision-making regarding social and environmental initiatives in organisations, which is the focus of this study, a way of seeing these processes needs to be identified. This will then inform how data for the purposes of this study are gathered and analysed. This is what this chapter seeks to achieve.

Theorising can be viewed as a particular way of seeing (Scapens, 1994). Scapens admonishes researchers not to become unduly concerned about comparisons of what is done in practice against theoretical 'ideals', but rather focus more closely on the study of what is done practically. This admonition does not seem to suggest that theory has no place in accounting research. What is of importance is the determination of appropriate theory that would be used for a particular aspect of what is being studied. This assertion is supported by Bebbington, Brown, Frame and Thompson (2007) when they indicate that research engagements in social and environmental accounting need not be taken in a haphazard manner uninformed by theory. Scapens (1994) identified a gap between the theoretical materials intended to show practitioners how accounting should be done and what happens in practice. This reinforces his admonition of researchers to focus on practices within a theoretical framework.

To meet the objective of creating a theoretical framework that will guide the process of data collection, interpretation and analysis for this study, this chapter continues by examining theories in accounting and their relative appropriateness for this study.

3.1 Theories in accounting

According to Scapens (1994), neoclassical economics has largely formed the basis of accounting's conventional wisdom. He however advocates a focus on institutions so as to provide a basis for understanding accounting practices as institutionalised routines and for exploring the interaction between accounting and other social institutions.

Though Scapens advocates a shift from neoclassical economics in accounting research towards an institutional framework, he indicates the position of neoclassical economic theory as the starting point of theories in accounting. This he does by distinguishing between 'new' institutional economics that have developed as an extension of neoclassical economic theory and 'old' institutional economics that developed in opposition to neoclassical analysis. He asserts that when it comes to accounting, old institutional economics is a potentially useful framework.

3.2 Neoclassical economic framework

According to Ryan, Scapens and Theobald (2002), the essential characteristics of neoclassical economics that emerged in the second part of the nineteenth century have changed very little. The relatively insignificant changes that have occurred in neoclassical economics have, according to Ryan et al. (2002), been a translation of some of the rougher edges of the neoclassical economic framework into mathematics.

Central to neoclassical theory according to Ryan et al. (2002) is the notion of economic rationality whereby individuals maximise self-interest usually conceptualised as utility. In the case of firms, the availability of market prices allows economists to talk about profit maximisation. According to Scapens (1994), the main assumption of mainstream neoclassical economic theory (economic rationality and market equilibrium) raises concerns when it comes to its use as a basis for the study of accounting practice. These assumptions are particularly problematic when it comes to decision-making regarding investments with a considerable social and environmental content such as the uptake of electric vehicles.

3.3 Criticisms of neoclassical economic theory

According to Scapens (1994), the neoclassical theory of the firm was developed for market and industry analyses and not to provide an understanding of what managers actually do. This assertion by Scapens is supported by Ryan et al. (2002) when they note that over the years, neoclassical economics has been quite successful in predicting economic behaviour at the market level, but has seen little success when it comes to individual behaviour.

Ryan et al. (2002) argue that there is a considerable body of empirical evidence mostly derived from cognitive psychology that suggests that the individual does not possess the level of rationality and completeness of information required to undertake marginal analysis needed for utility maximisation in the case of individuals, and profit maximisation in the case of businesses/organisations.

Scapens (1994) indicates that neoclassical theory is unable to address fundamental economic realities. Particularly, he noted the inability of neoclassical theory to take into account uncertainty, bounded rationality, the presence of corporations, institutional complexities or the dynamics of actual adjustment processes. The shortcomings of neoclassical theory not being

able to address fundamental economic realities are largely overcome by institutional theory as described by Burns and Scapens (2000) and Dillard, Rigsby, and Goodman (2004). These are discussed in subsequent sections of this chapter.

Despite cautioning against the use of neoclassical economic theory in accounting research, Ryan et al. (2002) indicate that it provides a basis for most of the normative accounting models with a huge following.

Scapens (1994) notes that though individual decision-makers may be unable to constantly maximise their profits (as also acknowledged by Ryan et al. (2002), profits do provide the basis for predictable managerial behaviour. Additionally, Ryan et al. (2002) indicate that modern businesses are profit-seeking organisations, and that profit-seeking and maximisation do not amount to the same thing, except in a very simplistic view of the world.

Exploring accounting practices with respect to initiatives that have a substantial social and environmental content without considering the profit maximising motive of such organisations for undertaking or rejecting such projects would not be entirely apposite. These organisations need not be businesses or limited liability companies only, but public institutions could also be studied using the profit-maximisation assumption as postulated by neoclassical economic theory. As indicated by Scapens (1994), many organisations including those in the public sector are increasingly expected to be cost-effective.

The shortcomings of neoclassical economic theory according to Ryan et al. (2002) led to many economists proposing alternative approaches to the study of economic behaviour. These alternative approaches are considered in the following sections of this chapter.

3.4 Alternatives to neoclassical theory

Alternative traditions and approaches to research in accounting have to a large extent avoided the limitations of the neoclassical economic theory that have been mentioned above according to Ryan et al. (2002). They add that such alternative approaches have also succeeded in bringing to light issues both in theory and practice.

Ryan et al. (2002) trace the beginning of behavioural accounting to the 1960s and indicate that this centred on the individual decision-maker. Additionally, they note the emergence of organisational dimensions of accounting around that period which resulted in organisational theory being used to guide research.

Ryan et al. (2002) note the advantage these brought to accounting research was providing the discipline of accounting research with some added width and this was further enhanced when researchers began drawing on social theory. Though this study is not particularly concerned with behavioural research, these two alternative approaches to accounting research are of interest because their nomenclature (behavioural accounting research and organisation theory) contains elements that are of relevance to this study. This study is about how organisations incorporate social and environmental considerations into decision-making. The next section of this chapter briefly looks at behavioural accounting research.

3.5 Behavioural accounting research

Ryan et al. (2002) trace the beginnings of behavioural accounting research to Argyris (1952), when he documented cases in which budgets were used as a tool to pressurise both workers and managers and resultantly led to a general feeling of hostility and conflict between line managers and accountants. This study involves management control systems, examples of

which include budgets and hence a consideration of behavioural accounting cannot be totally out of place.

Ryan et al. (2002), note that central to behavioural accounting research conducted in the 1960s and early 1970s was the demonstration of how the design and use of budgets can have an impact on the behaviour of organisational participants, their levels of job satisfaction, and most importantly, their individual performance and the performance of the organisation as a whole. This can largely be seen as taking non-financial measures into account. Though behavioural accounting research started off with researchers asking how budgets affect people, by the close of the 1960s, Ryan et al. (2002) indicate that researchers were beginning to look at how people affect budgets.

Noguchi and Boyns (2012) bring the phenomenon accounting having the ability to influence, and be influenced to life when they indicate that the existence of an accounting practice is the result of a contest between those who want it and those who do not. This is an indication that there is the possibility of accounting practice(s) being influenced by other externalities. The issue of the power of accounting and the power over accounting has to do with the extent to which accounting practices influence, or are influenced by other factors or issues that have conventionally been unknown to accounting practice.

This study's focus of how social and environmental considerations are incorporated in decision-making largely brings out issues of power of accounting and power over accounting as well as a contest between social and environmental considerations and the conventional accounting practices which have existed all along. An important aspect of this study is about how sustainability comes to feature within decision-making and the form it takes. In as much

as the controversy about power of accounting and power over accounting seem to have a bearing on this study, it seems too simplistic to cover the entire areas of interest of this study.

The next section looks at organisational theory, which was also developed to overcome some of the shortcomings of neoclassical economic theory.

3.6 Organisational theory

Scapens (1994), sees accounting practices as institutionalised routines that enable organisations to reproduce legitimate behaviour to achieve organisational cohesion. This assertion by Scapens (1994) implies that accounting as institutionalised routines has the tendency to create an environment of understanding within accounting rules and procedures in an organisation. This propensity to influence actions and activities within an organisation is what Wickramasinghe (2006) sees as the power of accounting.

Scapens (1994) indicates that the rejection of the core assumptions of neoclassical economics is the beginning of an institutional economics approach to accounting research. He indicates that though an institutional economics framework retains an economic approach, it provides a useful theoretical framework for accounting practices through the introduction of social, political, and cultural elements.

At the heart of the institutional theory described by Scapens (1994) is the belief that accounting procedures and techniques introduced by managers and accountants through their actions would evolve and adapt to environmental conditions. This presupposes that new accounting techniques and procedures would inevitably become established in an organisation through its interaction with existing organisational conditions over time.

This study seeks to explore how organisations incorporate social and environmental considerations into decision-making. The focus is on the introduction or existence of techniques and procedures through the diffusion of such practices into organisational practices and procedures, particularly regarding the engagement with electric vehicles.

An advancement of the institutional theory described by Scapens (1994) is provided by Burns and Scapens (2000). They provide a framework intended to guide researchers interested in studying accounting practices and procedures change. An assertion that accounting practices can both shape, and be shaped by the institutions that govern organisational activity is the starting point of Burns and Scapens' institutional theory. In situations where accounting practices shape institutions that govern organisational activity, Wickramasinghe (2006) refers to this as the power of accounting. On the contrary, where accounting practices are shaped by the institutions that govern organisational activity, Wickramasinghe (2006) refers to this as the power over accounting.

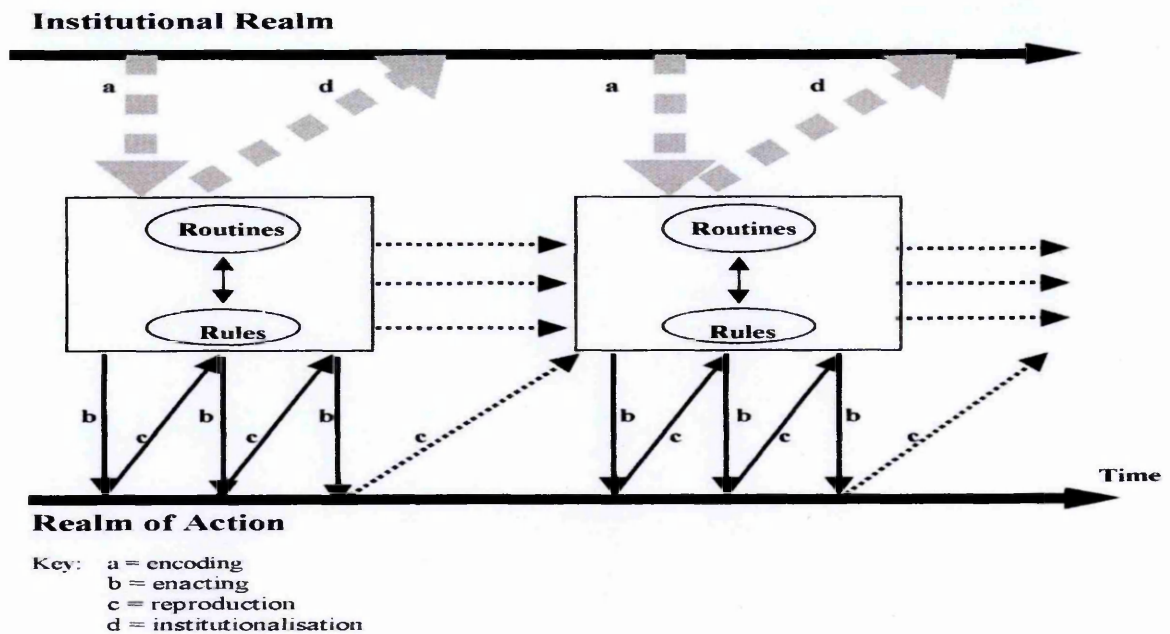
The tendency of accounting practices to shape institutions that govern organisational activity as acknowledged in Scapens' (1994) description of institutional theory, and the situation where accounting practices can shape, or be shaped by organisational activities as acknowledged by Burns and Scapens (2000) and Wickramasinghe (2006) is of interest to this study. This is because in the process of taking into account social and environmental considerations in accounting practices, these externalities could either shape existing accounting practices, or could be shaped by existing accounting practices and procedures. This is an observation from Burns and Scapens (2000), Wickramasinghe (2006) as well as Noguchi and Boyns (2012).

Burns and Scapens (2000) provide the figure below (Figure. 3.1) as a description and explanation of the analytical concepts to guide the study of accounting change. Prior to the

institutionalisation of rules and routines, Burns and Scapens (2000) identify the processes of encoding, enacting, and reproduction as intermediary processes that occur before institutionalisation. The process of encoding indicated as 'a' in Figure 3.1 'draws on the taken-for-granted assumptions comprising the institutional principles, through their instantiation in existing meanings, values and power,' (Burns and Scapens, 2000, pg. 8). The encoding part of the institutionalisation theory as postulated by Burns and Scapens (2000) seems to be of relevance to this study.

This is because this study involves an examination of how organisations incorporate social and environmental considerations into decision-making practices with emphasis on electric vehicles. Since the practice of incorporating social and environmental considerations into decision-making through the use of an appropriate social accounting such as sustainability assessment modelling is not widespread in organisations, when these assessment tools are observed to be used in the participating organisations and making initial inroads, they would be said to be at the encoding stage as described by Burns and Scapens (2000).

Figure 3.1 The process of institutionalisation



Source Burns and Scapens (2000) pg. 7.

The process of enactment indicated as 'b' in Figure 3.1 'may involve conscious choice, but will usually result from reflective monitoring and the application of tacit knowledge about how things are now,' (Burns and Scapens, 2000, pg. 8). This aspect of the institutionalisation process as indicated by Burns and Scapens (2000) would be said to be the case in participating organisations that have been already exposed to social accounting technologies such as sustainability assessment modelling. This is because Burns and Scapens' description of enacting presupposes that such rules and routines should have gone through the process of encoding before the process of enacting can then set in.

According to Burns and Scapens (2000), the process of reproduction indicated as 'c' in Figure 3.1, may be conscious or unconscious, and takes place as repeated behaviour occurs.

Conscious reproduction according to them is when actors are able to rally the resources and rationales required to collectively question the existing rules and routines. In the situation where systems to monitor the execution of the routines do not exist and the rules and routines are not sufficiently understood, and/or accepted by the actors, then unconscious or unintended reproduction is the result. According to Burns and Scapens (2000), institutionalisation is said to occur when the rules and routines become simply the way things are.

From the earlier discussion on encoding and enacting, the processes of reproduction, indicated as 'c' in Figure 3.1, and institutionalisation indicated as 'd' in Figure 3.1, would be said to be what pertains in the participating organisations examined in this study if a social accounting technology such as sustainability assessment is the existing decision-making tool.

A possible limitation about the institutionalisation theory as put forward by Burns and Scapens (2000), is that it presents the process of institutionalisation as made up of the 'sub-processes' of encoding, enacting, reproduction and then institutionalisation. These processes are largely portrayed by Burns and Scapens as linear and sequential. Burns and Scapens' description of the institutionalisation process seems to suggest that the occurrence of a particular aspect of the institutionalisation process is dependent on the completion of the process preceding it. However, there is the possibility for these processes to be occurring concurrently.

Perhaps the most comprehensive and most appropriate theoretical framework for studying accounting change in terms of exploring how organisations incorporate social and environmental considerations into decision-making, which this study seeks to do, is the version of institutional theory provided by Dillard, Rigsby, and Goodman (2004) and also used by Noguchi and Boyns (2012) in their study. The next section looks at this theoretical

framework and then a conclusion is drawn on which theory or theories, is/are most appropriate to guide this study.

3.7 Dillard et al. (2004)'s institutional framework

Noguchi and Boyns (2012) adopt the lens of the institutional theory provided by Dillard et al. (2004) in their study. Though not the first time, Noguchi and Boyns (2012) refer to the framework provided by Dillard et al. (2004) as new institutional sociology. This nomenclature came up as an ex-post title based on the discourse of Dillard et al. (2004). This is not peculiar to the institutional theory provided by Dillard et al. (2012). Theories such as actor-network theory, labour process theory, and transaction cost theory originating from authors such as Michel Callon, Harry Braverman and Ronald Coase respectively, came by their nomenclature in a similar ex-post manner.

The institutional theory provided by Dillard et al. (2004) is based on institutional theory (as described by Burns and Scapens, 2000). However it differs particularly from Burns and Scapens (2000) institutional theory because it makes use of a set of theories. This is a departure from old institutional economics which has been described earlier in this chapter. Dillard et al. (2004) make use of theories and concepts such as structuration theory, duality of structure, as well as rationality borrowed from old institutional economics.

Dillard et al. (2004) actually acknowledge that the framework they provided was an extension of the institutional framework provided by Burns and Scapens (2000). The concepts of encoding, enacting, reproduction, and institutionalisation as described by Burns and Scapens (2000) are acknowledged by Dillard et al. (2004). However, this framework has been expanded and provides a comprehensive conceptual basis for exploring the practice of incorporating social and environmental considerations into decision-making.

The framework explicitly recognises the political nature of institutional change and provides a basis for a more complete understanding of the dynamics in such a change. Dillard et al. (2004) argue that changes in accounting practices and the influence of these practices on institutional and organisational change can be more clearly understood using this framework.

The framework depicts the socio-economic and political context better and more directly addresses the dynamics of enacting, embedding and changing organisational features and processes. This study seeks to better understand institutional accounting practices and change processes, and this framework is appropriate for such an academic enterprise.

Dillard et al. (2004) integrate three levels of analysis of accounting change. These are listed in Table 3.1 below:

Table 3.1 Three levels of analysis of accounting change

Macro factors
Overarching influence of political, economic and social systems
Emphasises institutional isomorphism for legitimacy
Organisational field
Power of industrial coalitions and groupings
Competitive pressure as a driving force of accounting change
Legitimacy
Intra-organisational imperatives
The role of key reflective organisational participants
Internal sponsor
Change champion
Group dynamics and internal consensus building

Source: Dillard et al., 2004.

Dillard et al. (2004) indicate that at the macro level, laws and regulations are informed by discursively formulated, subjectively rational norms and values. They add that the primary areas to be addressed will include wealth redistribution, community property responsibilities, wage and price controls, currency and trade regulations as well as reporting regulations favouring community constituencies. The factors at this level can influence decision-making in organisations to take into account the other considerations mentioned by Bebbington et al. (2007) in sustainability assessment modelling. Hopwood et al. (2010) also identifies factors that need considering. The factors at this level can influence decision-making in organisations to take into account the considerations Bebbington et al (2007) and Hopwood et al. (2010) indicate should be taken when assessing social and environmental initiatives.

According to Dillard et al. (2004) in such a situation, organisational activities are motivated from the imperative of legitimacy-seeking behaviour, which is influenced by socially constructed norms. They add that for organisations to survive, they must interact with their environment in ways perceived as acceptable to their various constituents in that environment. This is similar to what Hopwood et al. (2010) indicate as an organisation that can demonstrate a positive impact on the communities and environment in which it operates and is more likely to be able to maintain its licence to operate in terms of legal permits and contracts, local community support and broader support.

Since social and environmental factors have not normally been taken into account in conventional accounting practice as observed in Chapter 2, their consideration due to the recent importance attached to social and environmental issues can largely be seen as what Dillard et al. (2004) as well as DiMaggio and Powell (1983) describe as institutional

isomorphism¹. DiMaggio and Powell (1983) as well as Noguchi and Boyns (2012) classify the motivation to adopt institutional practices into coercive, mimetic and normative isomorphism.

According to DiMaggio and Powell (1983), coercive isomorphism results from both formal and informal pressures exerted on an organisation by another party upon which it is dependent, and by expectations of the society within which it operates. Mimetic isomorphism is a process that takes place when an organisation attempts to imitate a more successful referent organisation, a process that is often due to uncertainty and lack of guidance in its own environment. Normative isomorphism stems from professionalization (i.e. the collective struggle of members of an occupation to define the conditions and methods of work). See also Noguchi and Boyns (2012).

At the organisational field level, Dillard et al. (2004) indicate that industry norms, regulations and practices could be directed toward the value-free implementation of economic efficiency. The factors in such a situation would tend to influence decision-making in organisations to overlook social, environmental and other externalities that Bebbington et al. (2007) as well as Hopwood et al. (2010) acknowledge should be taken into account when making decisions involving social and environmental initiatives.

On the contrary, Dillard et al. (2004) acknowledge that industry norms, regulations and practices could be informed by value-driven criteria derived from the discursively formulated community norms and values and would be directed towards community well-being. In such a situation issues such as taking into account concerns of customers, attracting and retaining staff and reputation and brand as indicated by Bebbington et al. (2007) as well as Hopwood et

¹The adaptation of an institutional practice by an organisation.

al. (2010) will be taken into consideration when making decisions particularly regarding initiatives with a considerable social and environmental content such as an engagement with electric vehicles.

Additionally, Dillard et al. (2004) indicate that at the organisational level an organisation could be faced with legitimising structures requiring the implementation of formal rationality in understanding technical, administrative and contextual relationships. They add that the means by which resources are allocated and controlled in such a system are embodied within formal, hierarchical administrative structures with the primary evaluative criteria being profit maximisation and economic wealth accumulation. Under such circumstances, decision-making will be done without taking into account social and environmental issues as well as other externalities as indicated by Bebbington et al. (2007) and Hopwood et al. (2010).

Also, Dillard et al. (2004) indicate that resources can be allocated and controlled at the organisational level based on social consensus developed through discussion and debate and actors at this level are held accountable as members of an ongoing community. According to Dillard et al. (2004) the focus at the organisational level in this instance is community building. At this level decision-making will take into account the factors that Bebbington et al. (2007) as well as Hopwood et al. (2010) indicate need to be taken into account when assessing an initiative with considerable social and environmental content such as the uptake of electric vehicles.

Dillard et al. (2004) provide that there is a hierarchy of institutional influence where the economic and political level provides the foundations for organisational field level institutions and the organisational field provides the context for the institutions confronted by and embedded in organisations. The framework explicitly recognises the organisational field as an

interactive part of a larger social system that must be considered when examining the establishment, embedding and deinstitutionalisation of criteria and practices.

In recognising the role of the larger social system in the establishment, embedding and deinstitutionalisation of criteria and practices, Dillard et al. (2004), acknowledge that tensions normally exist between formal and substantive rationality as ways of knowing and therefore justifications for actions. It is noteworthy that Bebbington et al. (2007) as well as Hopwood et al. (2010) also emphasised the role of the larger social system in the evaluation of initiatives with a considerable social and environmental content. Dillard et al. (2004) note that formal rationality is calculation oriented, for example, accounting figures assumed to be value neutral, rational and a universalistic basis for making economic decisions; and substantive rationality relates to the substance of the values, ends, needs of social groups and the institutions that promote them.

Formal rationality and substantive rationality as noted by Dillard et al. (2004) and the tension thereof, brings to light the issue of power of accounting or power over accounting as mentioned by Burns and Scapens (2000) and Wickramasinghe (2006). The concept of formal rationality as described by Dillard et al. (2004) is the basis of conventional/traditional accounting measures as indicated in Chapter 2. Formal rationality is in consonance with the tenets of neoclassical economic theory. It is based on economic or financial figures forming the basis of making decisions within organisations. The concept of substantive rationality as indicated by Dillard et al. (2004) will largely take into account the factors that Bebbington et al. (2007) and Hopwood et al. (2010) indicate need to be accounted for in assessing initiatives that have a substantial social and environmental content such as the uptake of electric vehicles.

3.8 Gond et al. (2012)'s ideal type configurations of sustainability integration and Dillard et al. (2004)'s institutional theory

The modification of management tools to take into account social and environmental dimensions is what Gond et al. (2012) refer to as sustainability control systems. This modification then determines the configuration that an organisation can be classified into according to the eight ideal types they describe as presented in chapter 2 (2.5.3).

The institutional theory provided by Dillard et al. (2004) and presented in Table 3.1 takes into account the processes of encoding, enacting, reproduction and institutionalisation as presented in Figure 3.3. Though the institutional theory provided by Dillard et al. (2004) and the ideal type configurations of sustainability integration do not overlap completely, they do complement each other and are useful for this study.

At the macro level, as a result of the overarching influence of political, economic and social systems as well as institutional isomorphism for legitimacy, existing management tools through the process of encoding are modified to become sustainability control systems as described by Gond et al. (2012).

The power of industrial coalitions and groupings as well as competitive pressure results in the enactment of these modified management control systems into sustainability control systems at the organisational field level.

Key organisational participants, internal sponsors and change champions at the organisational level champion the reproduction and institutionalisation of these sustainability control systems as described by Gond et al. (2012).

3.9 Summary and conclusion

From the foregoing, it can be concluded that accounting research and accounting practice has been influenced by a variety of theories. Neoclassical economic theory has played a pivotal role in the development of alternative theories of accounting research. Though several alternative theories to accounting research have evolved over the years, most of these theoretical alternatives still have as their backbone the neoclassical theory of the firm.

This study concerns organisations' assessment of initiatives with a substantial social and environmental content, in this instance an engagement with electric vehicles. In line with neoclassical economic theory and conventional accounting measures, organisations would only take decisions that go on to maximise the profits of the organisation. Any decision that serves a contrary purpose would be rejected. Currently, the uptake of electric vehicles is deemed not to be financially prudent by most organisations and individuals. This is usually attributable to the significantly higher initial purchase price of electric vehicles as well as a lot of uncertainty surrounding other issues such as battery life and residual value. This presupposes that if organisations were to be guided by the neoclassical economic cardinal principle of profit maximisation, and in line with conventional accounting, would not consider the uptake of electric vehicles. However, some organisations have started engaging with electric vehicles. The organisations that have started exploring the uptake of electric vehicles in the Milton Keynes area are the main organisations that information is sourced for the purpose of this study.

This study seeks to identify whether such motivation emanated from these businesses realising that such an engagement with electric vehicles would result in a maximisation of their profits as indicated by neoclassical economic theory and conventional accounting, or they took into

account social and environmental issues, as well as other externalities, as indicated by Bebbington et al. (2007) as well as Hopwood et al. (2010).

In this vein mainstream neoclassical economic theory which forms the basis of conventional accounting, will not on its own enable the entire story surrounding decision-making regarding initiatives with a considerable social and environmental content to be explored. Dillard et al. (2004)'s institutional framework makes room for both formal rationality, which has profit maximisation as its bedrock, as well as substantive rationality, which has as its bedrock the consideration of social, environmental and other externalities in assessing sustainable development initiatives. This allows for the consideration of the factors indicated Bebbington et al. (2007) as well as Hopwood et al. (2010). The institutional framework provided by Dillard et al. (2004) is the lens this study adapts to for the analysis and interpretation of the data that are gathered for this study.

The next chapter of this study covers the research methodology of this study bearing in mind the theoretical framework that has been adopted for the study.

4 Methodology

4.0 Introduction

The preceding chapter identified Dillard et al., 2004's version of institutional theory as representing an appropriate theoretical approach to use in this study. This chapter contains an exploration of wider logics of enquiry, of how new knowledge is generated and justified (see Blaikie, 2000). This helps to formulate the method used in this research and the techniques or procedures used to collect and analyse the data obtained. In conducting this research, the researcher is influenced by his world view on what constitutes knowledge and how this knowledge is credibly generated. The researcher's world view about what constitutes knowledge and how it is generated is always contestable and hence there is the need to articulate and justify the researcher's world view about knowledge and its influence on the research conducted.

This chapter continues with a brief discussion of the major alternative approaches to social science research (see Blaikie, 2000; Stainton-Rogers, 2006; and Hammersley, 2013) with respect to their ontological and epistemological assumptions. A justification for the appropriateness of the approach adopted for the study is also articulated. This is then followed by the techniques and procedures that are used to collect and analyse data in respect of this study.

4.1 Ontological and epistemological underpinnings of research framework

Philosophically, Blaikie (2000) indicates that ontology is 'the study or science of being' and epistemology is 'the theory or science of the method or grounds of knowledge' Blaikie (2000)

adds that ontology is a theory about the nature of reality, as to whether it exists objectively or subjectively, and an epistemology is a theory about how knowledge of reality is to be obtained. This philosophical understanding of ontology and epistemology is shared by Hammersley (2013) who indicates that ontology relates to the nature of the social world and epistemology relates to how knowledge is possible.

From these philosophical expressions of ontology and epistemology, it can be seen that a researcher's ontological viewpoint will largely influence the researcher's epistemology. This perspective is shared by Stainton-Rogers (2006) who indicate that ontology addresses questions about what things are and their being-in-the-world and epistemology is the study of the nature of knowledge and how it can be gained.

Largely, a researcher's viewpoint on what the world consists of, and particularly with respect to a specific phenomenon or area of research interest, the entities that operate in it and how they interrelate to each other (ontology), would invariably influence the researcher's opinion on what counts as valid knowledge and how it can be gained (epistemology).

Stainton-Rogers (2006) also identify two main ontological perspectives: positivist ontology and constructionist ontology resulting in two epistemological perspectives: positivist and constructionist.

4.1.1 Positivist ontology

Stainton-Rogers (2006) indicate that positivist ontology regards the world as objectively 'out there', real and completely separate from human meaning-making. In this vein, this perspective sees the world, whether physical or social, as an ordered system made up of discrete and observable events that have objective reality and operate in a systematic and

lawful manner. Hammersley (2013) indicates that though positivism is a major influence on quantitative research, it has also shaped qualitative research in some respects.

From the earlier assertion that a particular ontological perspective logically influences a researcher's epistemological perspective, Stainton-Rogers (2006) proceeds to identify positivist epistemology.

4.1.2 Positivist epistemology

Stainton-Rogers (2006) indicate that positivist epistemology regards knowledge as only gainable through gathering facts about the world through observing it in a systematic and objective manner. This is usually done through an experimental method (i.e. testing of hypotheses to gradually build and refine universal 'laws of nature'). To a large extent positivists hold that there is a straightforward one-to-one relationship between things and events in the outside world and people's knowledge of them. This is acknowledged by Hammersley (2013) when he indicates that positivism largely claims that all knowledge must be grounded in sense experience that is subjected to methodological control.

Positivism is much more aligned to the concept of formal rationality as described by Dillard et al. (2004). This worldview has economic rationality as its basis and conventional/traditional accounting as described in Chapter 2 subscribes to this worldview. As indicated in Chapter 3 this worldview on its own is not enough to explore how organisations incorporate social, environmental and other externalities in decision-making regarding an initiative such as an engagement with electric vehicles.

In as much as most natural scientists believe they can progressively pin down 'the facts' and get close enough to reality, Stainton-Rogers (2006) indicates that few scientists claim that this

is ever entirely possible, since human perception and understanding are fallible and that people will always be somewhat selective and biased by their preconceptions. This to a large extent leads to constructionist ontology and epistemology.

4.1.3 Constructionist ontology

According to Stainton-Rogers (2006), constructionist ontology regards the world as we know it as, literally, just that – the world as we (humans) know. This makes constructionism broader and more diverse compared to positivism as indicated by Hammersley (2013). Stainton-Rogers (2006) indicate that constructionism draws on postmodern theory, which offers an extensive and elaborate body of theorisation about the relationship between knowledge and power.

It seems entirely apposite to reason from Stainton-Rogers' description of constructionist ontology that since knowledge about reality is normally generated by human agents in the form of researchers, their intervention or role in the generation of the resultant knowledge of reality would inevitably bring with it actions and inactions of the researchers. This thereby makes it somewhat difficult if not impossible for the generation of knowledge by human agents to be absolutely devoid of the researcher's preconceptions, past experiences and knowledge about reality and how it exists. This observation is largely supported by Hammersley (2013) when he indicates that at most, a constructionist inquiry is largely to highlight the constructed, rather than 'natural' or 'scientific' character of dominant methodological philosophies. Constructionist ontology results logically in a constructionist epistemology.

4.1.4 Constructionist epistemology

Stainton-Rogers (2006) indicate that there are three tenets of constructionist epistemology:

- *that knowledge is constructed rather than discovered*
- *knowledge is multiple rather than singular*
- *knowledge is a means by which power is exercised.*

Stainton-Rogers goes on to add that constructionists do not deny the existence of a real, material world, but they do deny that this real world can ever be simply ‘dis-covered’. In line with this thinking, she states that constructionist epistemology holds that there will never be one single reality. A variety of different types of knowledge are constructed by people, and each of these is made real by human meaning-making.

Constructionism is aligned more to the concept of substantive rationality as described by Dillard et al. (2004). This worldview accommodates taking into account social, environmental and other externalities in decision-making. Sustainability assessment modelling as described by Bebbington et al. (2007) to some extent subscribes to this worldview. However, constructionism on its own is not enough to explore how organisations incorporate social, environmental and other externalities in decision-making. This is mainly because of constructionism’s bias for the notion that knowledge is constructed rather than discovered. The economic/financial aspect of sustainability assessment modelling is likely to suffer from this bias.

In between these two seemingly extreme perspectives of ontology and epistemology (i.e. positivism and constructionism) are what could be somewhat categorised as middle ground

perspectives of ontology and epistemology. These include: critical rationalism, interpretivism, and realism.

4.1.5 Critical rationalism

To a large extent critical rationalism shares a similar ontology to that of positivism, but rejects the epistemology associated with positivism. This seems to defeat the earlier assertion that a particular ontological perspective logically influences a researcher's epistemological perspective. Here the ontology is similar but the epistemology differs.

According to Hammersley (2013) positivism asserts that objective observation, unbiased by any preconceptions, is the route to all knowledge. However, critical rationalists argue that this is impossible. The argument is that, without at least a tentative or implicit theory, how would one know what to observe? Critical rationalists argue that science involves the formation of contestable hypotheses about how the world works that are then tested against observations. In the view of critical rationalists, scientific knowledge consists of a body of tentative theories or hypotheses which have not been rejected to date.

4.1.6 Interpretivism

Hammersley (2013) argues that interpretivism has been among the most important sets of ideas underpinning qualitative enquiry. He notes that interpretivism stresses cultural difference while insisting that understanding can take place across cultures. This assertion by Hammersley (2013) indicates that interpretivism is based on an ontological perspective in which social reality is deemed to be the outcome of processes by which social actors together negotiate the meanings for actions and situations. This ontological perspective can largely be seen to be in line with constructionist ontology which acknowledges the role of human actors

in the generation of knowledge and seems to assert that the generation of knowledge cannot be absolutely devoid of the actions and inactions of human agents and researchers.

Interpretivism can largely be seen to be subjective. This places it on different sides of the coin from positivism in terms of epistemology. Its epistemology is based on the premise that knowledge is derived from everyday concepts and meanings (i.e. the things which condition the behaviour of social actors).

Given that interpretivism is subjective, generalisations and predictions which are the goals of positivists and critical rationalists cannot be made with interpretivist research and the findings of interpretivist studies are not generalisable. Though generalisation is not the objective of this study, the bias of interpretivism for the concept of substantive rationality makes not entirely appropriate for this study.

4.1.7 Realism

Ontologically, the objects of a scientific enquiry are assumed to exist objectively in a realist study. In such a study, a distinction is drawn between:

- *empirical domain (of observed objects or events)*
- *the actual domain (of all objects or events, observed or not)*
- *the real domain (processes or mechanisms that generate observable objects or events).*

Realism largely involves the building of models of structures or mechanisms such that, if they were to exist and act in the postulated way, they would account for the phenomenon being observed.

4.1.8 The ontological and epistemological perspective adopted for this study and its justification

This study seeks to explore how organisations incorporate social and environmental issues into decision-making. The practice of incorporating social, environmental and other externalities into decision-making as observed by Bebbington et al. (2007), Hopwood et al. (2010) and Fraser (2012), has not particularly diffused into organisational decision-making practices.

In chapter 2, this study began with an examination of the development of models of the phenomenon being studied against the background that such models will reveal the underlying mechanisms of reality. This was done through the construction of ideas about the phenomenon under study. The present situation with electric vehicles is such that there is a fluid situation on hand where organisations are exploring the uptake of electric vehicles. In this vein, the realist position was deemed to be most appropriate for the construction of this fluid process. The realist position links satisfactorily into the basis of the institutional framework of Dillard et al. (2004). This is because the realist worldview can accommodate both formal and substantive rationality. This makes it possible for the utilisation of conventional/traditional accounting measures and social accounting technologies by participating organisations in this study to be explored.

The realist position also allows for the building of models around the decision-making practices of both private and public sector organisations.

From section 4.1.7, it can be seen that realism can accommodate both the subjective interpretations of social actors and the objective existence of underlying causal structures and mechanism. As would be shown in later sections of this chapter, this research explores the

interaction between various organisations and institutions and how that subsequently influenced decision-making regarding initiatives that have a significant social and environmental content. The realist position provides the study with the needed ontological and epistemological basis of a scientific enquiry without losing sight of the subjective interpretations of social actors.

In choosing the realist position as most appropriate for this study, other positions were considered inappropriate for the project. These included: positivism, critical rationalism and interpretivism. The grounds on which these alternative positions were regarded as inappropriate are outlined below.

Positivism and critical rationalism share a similar ontological perspective that is largely based on an objectively existing, ordered universe made up of atomistic, discrete and observable objects and events. This ontological perspective though described as scientific, is not the same sort of scientific ontological perspective that is held by realists. The positivist/critical rationalist scientific viewpoint concerns establishing uniformities and regularities among observable events.

The positivist position tends to use a laboratory type experimental approach in the generation and justification of knowledge, and asserts that the route to all knowledge is through objective observation unbiased by any preconceptions. Though the critical rationalist position accepts that preconceptions have an input towards the generation and justification of knowledge, it emphasises the testing of theories or hypotheses against observations.

This study does not involve a laboratory type experimental approach nor is it the objective of the study to test any theories or hypotheses against observations in the process of generating

and justifying knowledge. Hence the positivist and critical rationalist positions are deemed to be inappropriate for this study.

At the extreme end of the ontological and epistemological continuum that has been earlier mentioned is interpretivism. The interpretivist position was considered as inappropriate for this study because it is based on an ontological perspective in which social reality is regarded as the product of processes by which social actors together negotiate the meanings for actions and situations (Hammersley, 2013). At the core of interpretivist ontology is that it is subjective and not 'out there'. Though this study does not follow the typical laboratory type scientific approach as the positivists hold, it adopted a scientific approach that is not in total agreement with the absolute subjectivity that comes with interpretivism.

According to Hammersley (2013) and Stainton-Rogers (2006), due to its largely subjective nature, findings from studies using the interpretivist approach can hardly be generalised.

Though the ultimate aim of this study is not to end up with generalisable findings per se, the underlying factors or basis on which this study is carried out when seen to be observed and a similar study carried out, should lead to similar findings. Hence the interpretivist position was also deemed as inappropriate for carrying out this study.

Based on the realist perspective adopted for the study, the next section looks at the research method that was used for the study that is consistent with the realist perspective. This starts with how the data were collected for the study.

4.2 Data collection

A realist ontology and epistemology has explanatory and non-predictive consequences with respect to its findings. In carrying out a study with this perspective, methods that are used to

collect data should be consistent with the characteristics of the expected findings. This study is linked to the Milton Keynes 'ELVIS' project, which provides relevant participants who are engaging with electric vehicles. A validation exercise is also conducted with a report on the work of the Energy Saving Trust. Energy Saving Trust conducted research linked to their 'Plugged-in Fleets' initiative (Energy Saving Trust, 2013). Access to organisations associated with the 'ELVIS' project in Milton Keynes provided the opportunity to engage with organisations involved with decision-making that have a substantial social and environmental content, in this case an engagement with electric vehicle. The 'ELVIS' project provides a single setting for an understanding of dynamics present in that setting as is required of such an approach.

The study of decision-making practices regarding an engagement with electric vehicles is a new field of research. Yin (2003) asserts that such an approach is appropriate for such research situations. This is supported by Flyvbjerg (2006) when he argues that such an approach is a necessary and satisfactory method for certain important research tasks in the social sciences, and it is a method that holds up well when compared with other methods in the gamut of social science methodology. This study concerns issues that have not been previously researched in depth and so it is entirely appropriate to adopt such an approach.

In order to study business decision-making practices, this research concentrates on fleet vehicles and company cars. Additionally, as noted in Potter and Atchulo (2013) company cars² have formed a major part of new car registrations in the UK since the 1970s. How decisions are made regarding vehicles could therefore have a major impact on the UK's car fleet as a

² Of the cars registered for the first time in 2011 in the UK, 60% were registered as company cars (UK Department for Transport).

whole. The data gathering process in a realist study can be done by using multiple data gathering methods (see Danermark et al. 2003). This study gathers data from a multiplicity of sources.

In as much as qualitative and quantitative methods may be combined within the same study, this study is largely qualitative. The qualitative data for the study are gathered mainly through participation in ELVIS events, interviews, questionnaires, and information from corporate communications/organisational reports.

4.3 Data collection strategy

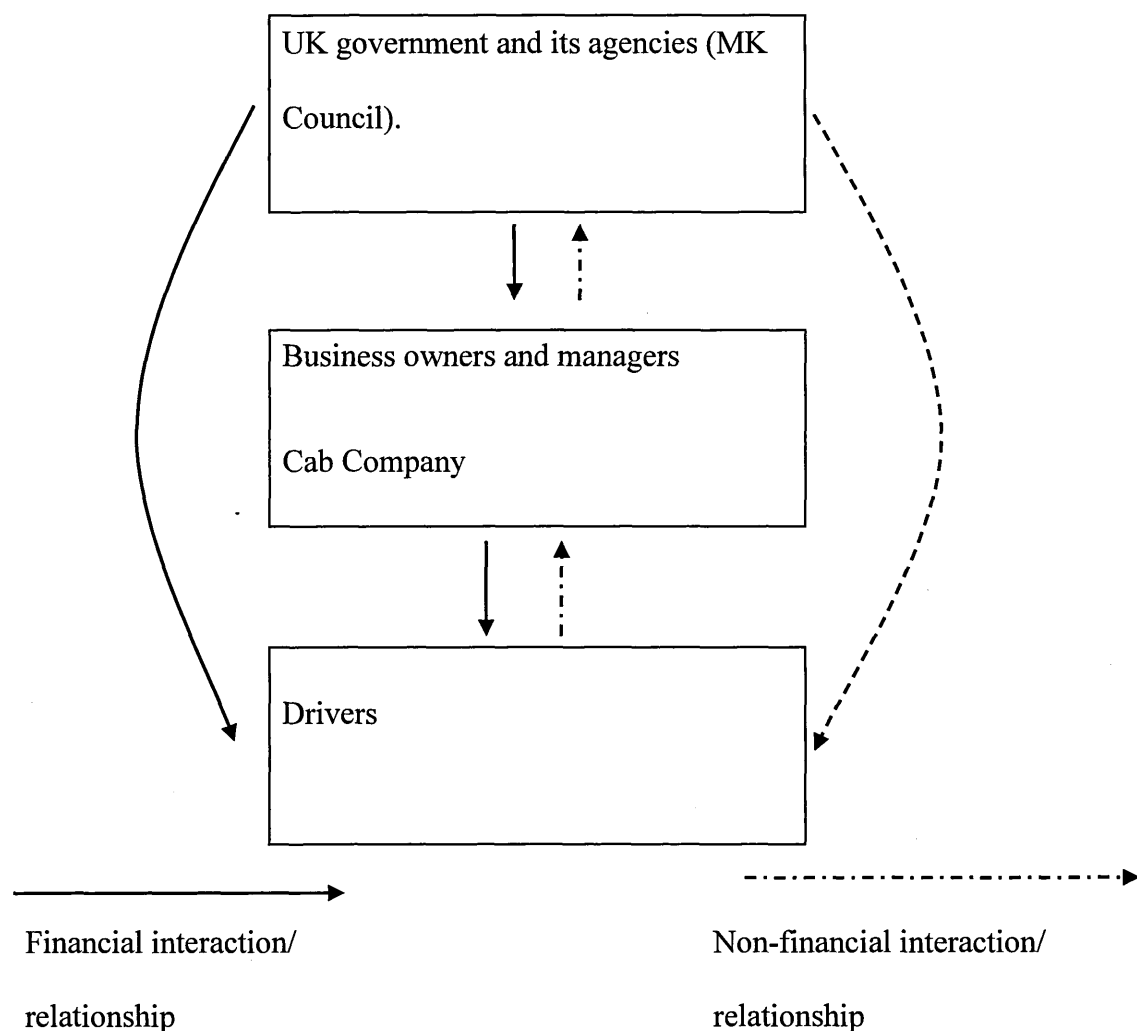
As part of The Open University's contribution to the Milton Keynes 'ELVIS' project, a series of business/organisational users' group discussion workshops took place at The Open University. The first in the series was held on 6 October 2011. Subsequent seminars were held in May and November 2012. These workshop events provided practical feedback from the participants to inform the study. Information gathered from the business users' workshops led to the identification of organisations/businesses that were particularly interested in the uptake of electric vehicles. This revealed a network of business and organisational factors that are illustrated in Figures 4.1–4.4.

There seem to be both a financial and non-financial relationship between the UK government and its agencies and businesses/business owners and managers. This relationship is largely at the macro level of the three levels of analysis of accounting change indicated by Dillard et al. (2004). A realist approach accommodates these financial and non-financial relationships. The financial relationship could be seen to stem from policy initiatives such as the plug-in grant, provision of subsidies for installing electric vehicle charging points at work places and businesses, exemption from the payment of parking charges in certain places, and so on. A

somewhat non-financial relationship comes in the form of local licensing and regulation policy direction that may have an impact on the purchase and usage of vehicles in the near future for commercial purposes. It is noteworthy that there are likely to be some management control systems and, or sustainability control systems as described in Chapter two within the organisations to measure and manage the financial and non-financial relationships

A particular business that was identified from the business users' workshop to have a

Figure 4.1 Interaction between local authority, businesses and drivers



relationship described above was a Cab Company. The business model of the Cab Company is such that the business owners make the financial decisions; the management operates the company by taking trip requests and allocating these to drivers. Importantly, the drivers own their vehicles. The drivers pay 'rent' to the Cab Company as well as pay for the cost of buying and running their vehicles. The company provides the drivers with a booking system, brand advertising and allocate to them the booked journeys from clients.

The relationship/interaction between businesses/business owners and managers of the Cab Company and drivers also has both financial and non-financial dimensions. This relationship largely falls in the domain of the organisational level as indicated by Dillard et al. (2004). The financial and non-financial relationships are likely to be measured and managed by certain management control systems and sustainability control systems. The revenues of the business are largely dependent on the rent the drivers pay to the business such that there seems to be a direct relationship between the number of drivers and workload of a business and the revenue/income that the business makes. Another financial relationship between the Cab Company and the drivers is the workload that the business provides for the drivers.

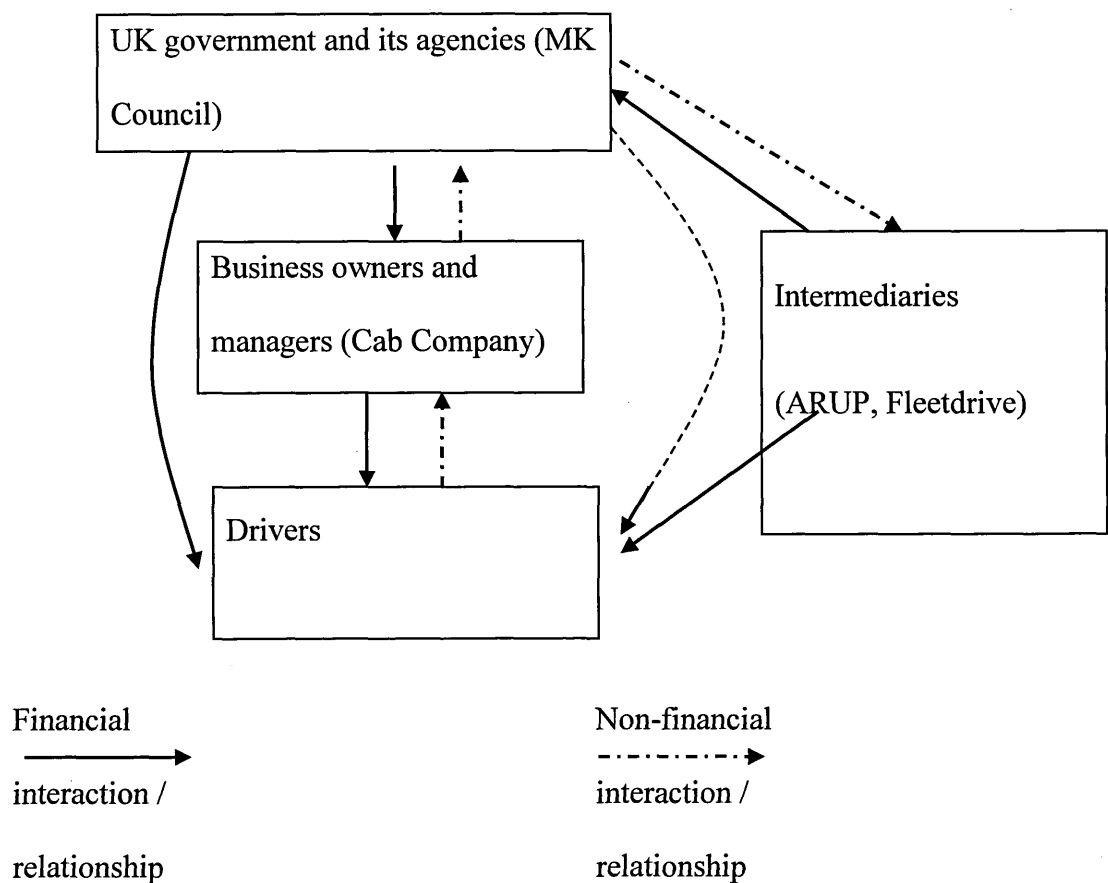
The owners of the Cab Company and managers and customers/clients also have both a financial and non-financial relationship, which can largely be also deemed to be at the organisational level as described by Dillard et al. (2004). The financial relationship is reflected in the volume of work that customers/clients provide for the businesses whereas the non-financial is the reduction in the carbon footprint of the customers/clients that the business provides through the usage of electric vehicles. As already indicated these relationships are likely to be governed and guided by certain management control systems and sustainability

control systems. It is the purpose of this study to explore such management control systems and sustainability control systems.

The relationship between the intermediaries³ and the UK government and its agencies can be seen to be both financial and non-financial. Government and its agencies have policies that provide a business and financial opportunity for the intermediaries. They in turn push the government's agenda of carbon emission reduction by making electric vehicles available and affordable to the average driver. This relationship is within the macro level of the three levels of analysis as described by Dillard et al. (2004), and there is the likelihood of the existence of management control systems and sustainability control systems for the measurement and management of these relationships.

³ These are organisations that come in to play a largely financial role to make electric vehicles available and affordable to individuals and organisations. Such organisations could be in the mainstream vehicle leasing industry or not.

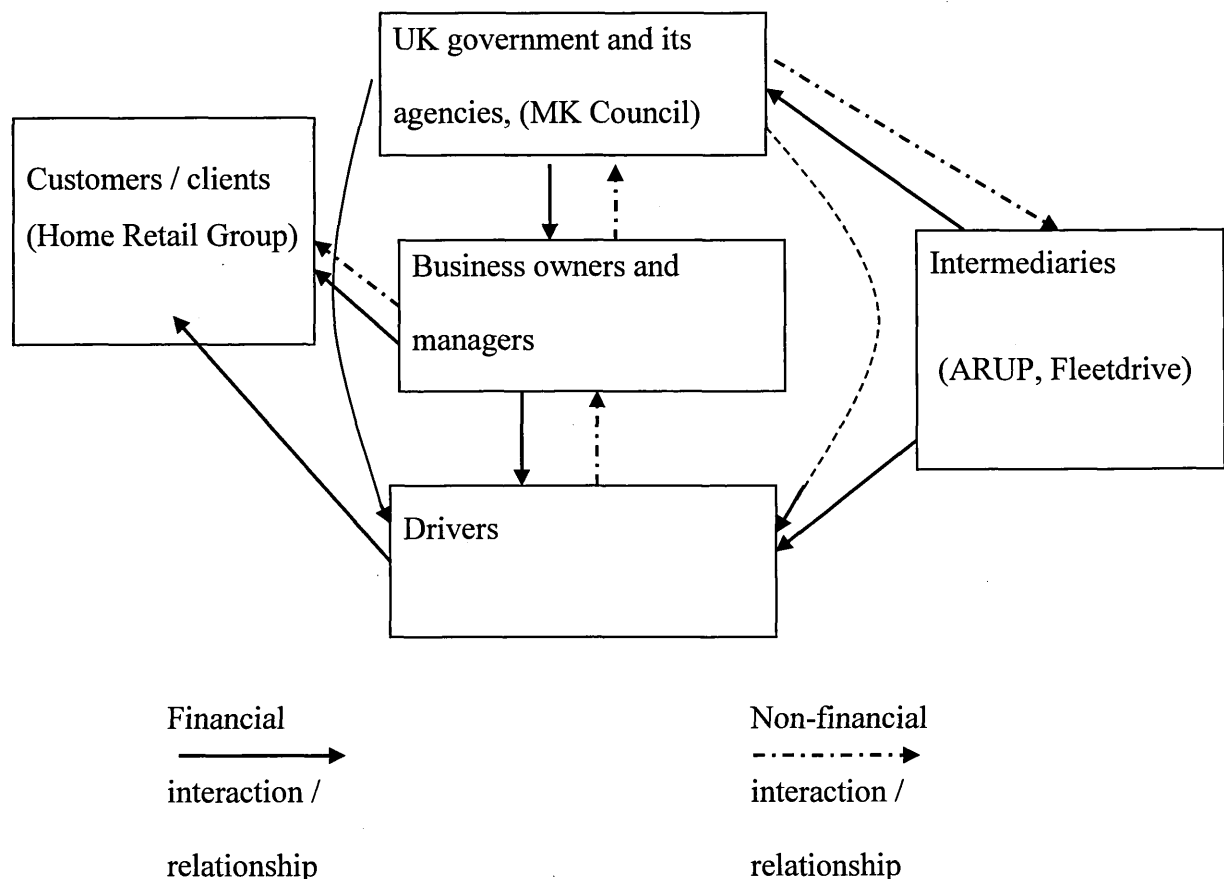
Figure 4.2 Interaction between local authority, businesses, drivers and intermediaries



Customer/Client relationship seems to be largely financial through the income that the drivers receive directly from the customers/clients. However in instances where the customer/client happens to be one that is interested in reducing their carbon footprint, a non-financial relationship could be seen to arise as well. This can be with, for example, a client having a green procurement policy that specifies booking low-emission cabs. Such a relationship can be deemed to be at both the organisational level and the organisational field level. The relationship between the intermediaries and the drivers is also largely financial in the sense that the driver pays the intermediaries a fee for making the electric vehicles available and

affordable to them. This relationship can largely be seen to be in similar domains as the customer/client relationship described above.

Figure 4.3 Interaction between local authority, businesses, drivers, intermediaries and customers of businesses



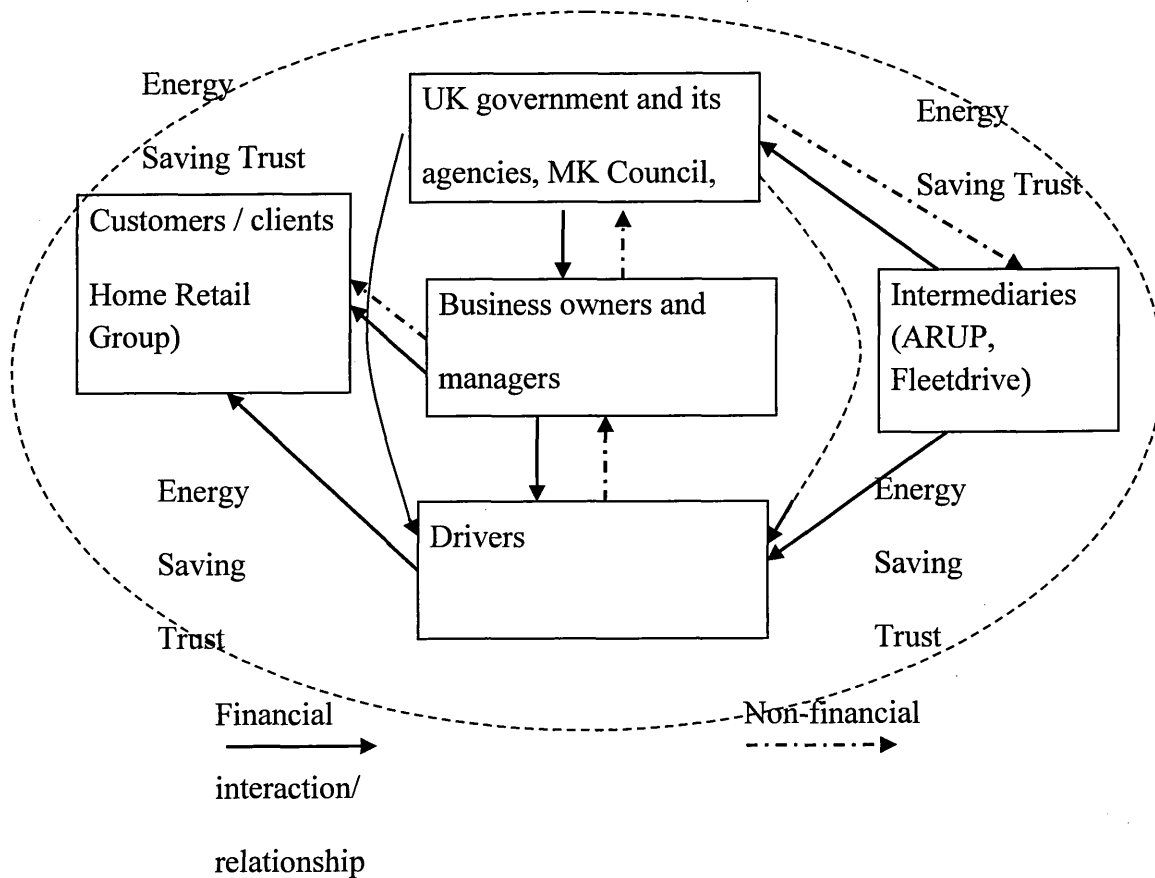
The evidence of the dominance of financial objectives over the non-financial and vice versa in each of these identified relationships and interactions would point to whether the decision-making with respect to the engagement with electric vehicles is largely influenced by formal rationality as described by Dillard et al. (2004) where conventional/traditional accounting techniques are prevalent, or by substantive rationality where social, environmental and other externalities are accounted for as indicated by Bebbington et al. (2007) and Hopwood et al. (2010).

Mention has already been made of the Energy Saving Trust who works with various organisations, including all the organisations that have been identified above, to help identify duty cycles that fit in with the characteristics of electric vehicles and also provides a total/whole-life cost of ownership framework tool which is discussed in Chapter 10 of this study. This relationship can largely be seen to be within the macro level as well as the organisational field level as described by Dillard et al. (2004).

The relationships and interactions reveal five main participants engaging with electric vehicles to make them part of the mainstream vehicle stock on the road. These include UK government agencies and departments, for example, Milton Keynes Council. Also among these five actors are businesses who intend to take up electric vehicles or have already taken up electric vehicles like the cab company interviewed, businesses that are interested in using electric vehicles for business travel and company cars, for example Home Retail Group, intermediaries who venture to make electric vehicles available and affordable to both individuals and businesses, for example Arup and Fleetdrive and last but not the least the EST.

This overall network is shown in Figure 4.4.

Figure 4.4 Interaction between local authority, businesses, intermediaries, business users and the Energy Saving Trust



The initial work in this research, on identifying these interactions in which decisions are made and in which decision-making practices take place, is in itself part of the contribution of this thesis. Mapping and understanding these networks of interaction is important to evaluating the role of decision-making practices that take place within them.

4.3.1 Selection of participants

The Milton Keynes 'ELVIS' project meets the specific needs of the study. Access to organisations in the Milton Keynes area was facilitated by The Open University being a partner in this programme.

A scientific representative sampling technique was not used in selecting the organisations/institutions and individuals that are participating in this study. A purposive approach was used to identify organisations and participants engaging with electric vehicle decision-making. The revelation of the organisational/institutional actors from the first business users' workshop at The Open University prompted a follow-up interview with one of the participants (the Cab Company). This was followed by interviewing the other organisational/institutional actors identified in Figures 4.1–4.4. In this vein interviewee organisations and individuals were largely chosen through the snowballing technique. The organisations that were chosen for the study were: the Cab Company (Skyline Taxis), Milton Keynes Council, Arup, Fleetdrive, Home Retail Group and the Energy Saving Trust.

4.3.2 Interviews

Key officials involved with decision-making regarding the engagement with electric vehicles in the above organisations were interviewed. The interview questions⁴ and questionnaire largely explored:

1. Social and environmental practices in the participating organisations at the strategic level particularly regarding the engagement with electric vehicles.
2. Management accounting practices regarding social and environmental activities in the various organisations.
3. Operational/tactical aspects of the engagement of the organisations with electric vehicles.

In this vein two sets of questionnaires were administered to relevant officials at different levels in the participating organisations. These individuals were at the;

1. Strategic level
2. Management accountants or persons who performed such functions in the organisations.
3. Operational level staff who are directly involved with the organisation's engagement with electric vehicles.

It is however noteworthy that there is the possibility of one individual in an organisation cutting across more than one of the categories indicated above or even all the categories indicated above and hence in a position to respond to all three interviews/questionnaires.

⁴ The interview questions at the interview sessions are attached to the thesis as Appendix C.

The responses were recorded with the explicit permission of the respondents in the case of the face-face interviews and then transcribed. Below are details of the interviews that were conducted with the organisations selected and indicated in Figure 4.4 and the posts within these organisations that were interviewed:

- The Cab Company (Skyline Taxis) – 2 interviews with the Marketing Manager who initiated the company’s drive to take up electric vehicles which lasted for 32.07 and 30.10 minutes respectively. An interview with a Director in-charge of Financial Analysis which lasted for about 30 minutes.
- Milton Keynes Council – Interviews with:
(1) the Head of Transport which lasted for 45.19 minutes (2) the Carbon Manager which lasted for 34.39 minutes and (3) the Corporate Finance Manager which lasted for about 35 minutes.
- Fleetdrive – 3 Interviews with the Managing Director who is involved in the organisation’s engagement with electric vehicles at the strategic level, financial analysis and at the operational level. The interviews lasted 45.20, 30 and 35 minutes.
- Arup – 3 Interviews with a Group Board Member spearheading the organisation’s electric vehicle projects particularly in the Milton Keynes area. He is also engaged at the strategic level, does financial analysis particularly regarding electric vehicles and also directly involved at the operational level. The interviews lasted for 58.43 minutes, 40 minutes and 30 minutes.
- Home Retail Group – Interviews with the Transport Manager which lasted for 56.45 minutes, and correspondence with the World Finance Manager.

- Energy Savings Trust – 2 Interviews with: (1) the Head of Transport of the Climate Group which lasted for 32.43 minutes and (2) Project Liaison Officer which lasted for 30 minutes.

4.3.3 Corporate communications/organisational reports

Organisational documentary sources were also obtained to inform the study. This is in line with the assertion of Beck, Campbell and Shrives (2010) that corporate communication can be interrogated, its content extracted and the data analysed. These include corporate websites, sustainability reports, annual reports, and press reports of the participating organisations in the study.

The documents used were in relation to the social and environmental practices of the participating organisations and in particular the organisations' actions and activities regarding the engagement with electric vehicles. These organisational reports/corporate communications were particularly from 2010 to 2013 since the Milton Keynes 'ELVIS' project began in 2010. Some documents were requested from the participating organisations in instances where these documents were classified business information not meant for external consumption.

The organisations identified in Figure 4.4 that participated in the study were of a varying size and the type of organisational reports/corporate communications that were used for this study were specific to the characteristics of these organisations. Below is a list of the specific organisational reports/corporate communication that were drawn upon for the various organisational participants:

- The Cab Company (Skyline Taxis) – The corporate website.

- Milton Keynes Council – The corporate website, core strategy document, and the Local Transport Plan 3 (LTP3).
- Fleetdrive – The corporate website.
- Arup – The corporate website and the corporate reports (2010–2013).
- Home Retail Group – The corporate website and the ‘being a good neighbour’ section of the website.
- Energy Savings Trust – The corporate website.

4.4 Data interpretation and analysis

This study has the Milton Keynes ‘ELVIS’ project as its main source of data. Yin (2003) and Flyvberg (2006) indicate that such an approach is appropriate for explorative studies. The Milton Keynes ‘ELVIS’ project comprises a number of subunits⁵ which need to be considered in order to be able to explain the phenomenon that is being studied.

Yin (2003) suggests that the theoretical framework of the study should provide direction in the areas of data collection as well as analysis. This study seeks to examine the decision-making practices of organisations surrounding their social and environmental activities, and in this case the engagement with electric vehicles.

As indicated in the preceding chapter, the institutional theory presented by Dillard et al. (2004) is an appropriate theoretical framework for the purposes of this study. This allows for the data that are gathered to be analysed to determine whether sustainability is embedded into the organisational strategy of the participating organisations strategies as presented by Gond et al

⁵ These subunits are the various organisations that were selected for this study.

(2012) and indicated in Chapter Two. Additionally the management control systems and related sustainability control systems used in the participating organisations is assessed in line with the framework presented by Gond et al (2010). Regarding the actual uptake of electric vehicles, the rationale for embedding sustainability in decision-making is analysed using the framework provided by Bebbington et al (2007) and Fraser (2012) as provided in Chapter Two.

The data for this study pertain to some organisations/institutions that form a part of the organisations that are examined within the Milton Keynes 'ELVIS' project. This study examines each of these organisations within the Milton Keynes 'ELVIS' project with respect to how they incorporate social and environmental considerations in financial decision-making regarding the uptake of electric vehicles. This is done with the institutional theory provided by Dillard et al (2004) as the background for the separate analysis of the organisations.

The separate analysis of the individual organisations then informs the analysis that is done for all the participating organisations.

4.4.1 Interviews and questionnaires

According to Blaikie (2000), the central activity in qualitative data analysis is a special form of coding. This facilitates description and is also used for analysis and theory generation. Similar to the concept of coding as indicated by Blaikie (2000) is the concept of indexing suggested by Crinson (2001) so as to avoid the exclusion of concepts. Data collected by use of the questionnaire largely follows the method of data collection conducted by Fraser (2012) where semi-structured interviews are the main source of data supplemented with notes taken at meetings. In this study notes taken at meetings are replaced by organisational reports such as sustainability reports, core strategy documents as well as relevant information that can be

gathered from the websites of the participating organisations. In this vein, the study adopts a method of analysis similar to that of Fraser (2012). The process of coding is done manually on two broad levels.

1. Coding the research instrument (interviews and questionnaires) drawing on the institutional theory provided by Dillard et al (2004), Gond et al (2012)'s configuring uses and integration of control systems, and Bebbington et al.'s (2007) sustainability assessment modelling in the assessment of sustainable development initiatives .
2. Further coding until there is saturation of the data.

Though this study is not overly concerned with theory generation, coding of the data gathered through the qualitative interviews and questionnaires conducted forms the basis of the analysis of the data. The first step in doing this is what Blaikie (2000) refers to as open coding. This involved breaking down the data into categories and sub-categories. The second stage is what Blaikie (2000) refers to as axial coding and this corresponds with the second stage indicated above. Relationships between the sub-categories and categories that were identified through open coding were explored.

4.4.2 Organisational reports

The corporate communications that are sourced for this study have been analysed to identify how these organisations incorporate social and environmental consideration into decision-making practices and decisions involving the engagement with electric vehicles in particular. These communications are self-reported and hence the Researcher used such information critically together with research evidence that was gathered from the interviews.

4.4.2.1 Management control/accounting systems and Sustainability control systems used in the organisations

The data gathered were investigated to identify whether management control systems and sustainability control systems were used in the participating organisations. If management control systems and sustainability control systems were used, it was further investigated to see whether these systems were used for the purposes indicated by Gond et al. (2012) as reviewed in Chapter Two.

4.4.2.2 Type of sustainability strategy adopted in the participating organisations

The data set for each participating organisation was also investigated to determine whether the management control systems and sustainability control systems were integrated, and if so, the configuration relating to management control systems and sustainability control systems as described by Gond et al. (2012) was explored.

4.4.2.3 Type of sustainability strategy adopted in the participating organisations

Bebbington et al. (2007) as well as Fraser (2012) go beyond the elements Hopwood et al. (2010) argue should be taken into account in making decisions regarding social and environmental activities such as the uptake of electric vehicles. They provide sustainability assessment modeling (SAMs) as indicated in chapter two. The data set is examined to ascertain

the rationale for engagement with particularly electric vehicles in the participating organisations bearing in mind the theoretical framework adopted for the study.

4.4.3 Logic of enquiry for the study

The core of the data for this study is gathered from qualitative interviews, questionnaires and corporate communications/corporate reports. Consequently, respondents' accounts on the topics under study make up the main data for analysis. Drawing on the work of Blaikie (2000), Stainton-Rogers (2006) examines three logics of enquiry: induction, deduction, and abduction.

Stainton-Rogers (2006) indicate that induction is the process of drawing inferences from observations in order to make generalisations. She notes that, ideally, the process of induction consists of four main stages: observation, analysis, inference, and confirmation.

Central to the induction process is gaining knowledge through gathering objective data without any preconceptions in order to establish regularities. This study is not without preconceptions as already indicated: the study is guided by Dillard et al. (2004)'s version of institutional theory as described in Chapter Two. Additionally, the objective of this study is not to make generalisations and hence the inductive process is not appropriate for such a study.

Contrary to the inductive process, according to Stainton-Rogers, is deduction. Deduction acknowledges that preconceptions play a key role in the gaining of knowledge. Deduction is theory driven according to Stainton-Rogers (2006). Putting a theory's predictions to test is central to the deductive process. In as much as this study has theory playing a key part, testing theory is not the objective of this study. The study is about gaining an understanding of how organisations incorporate social, environmental and other externalities into decision-making.

Hence the deductive process is not appropriate in the analysis of the data that are gathered for this study.

According to Stainton-Rogers (2006), there is a high propensity for the processes of induction and deduction due to the positivist nature to over-simplify highly complex things happening in the world. As will be revealed in later chapters, this study involves a highly complex phenomenon and adopting an inductive or deductive process in the study would result in an over-simplification of the phenomenon being studied.

Though a much less familiar term, abduction is logic of enquiry that Stainton-Rogers (2006) acknowledged. According to Stainton-Rogers (2006), the abductive logic of enquiry involves constructing new theory rather than testing it.

An even more important characteristic of abduction that makes it appropriate for this study is that it seeks to concentrate on developing tools to pursue research into meaning rather than a proliferation of more detailed theories. The use of an abductive process according to Stainton-Rogers (2006) provides not an explanation but an unfolding and uncovering of what is likely to be going on (explication).

Explication seems to go beyond an explanation and looks at what is actually going on in a specific setting. The objective of this study is to explore how organisations/institutions incorporate social and environmental considerations into accounting and finance practices regarding the uptake of electric vehicles. Hence an abductive process is deemed appropriate for this study.

The analysis was done with a series of themes or headings that reflect the research questions that were outlined in Chapter Two. Given the realist perspective adopted for the study, the

themes were used to explain what seems to be going on regarding incorporating social, environmental and other externalities into decision-making, in this case electric vehicles.

4.5 Summary and conclusion

This chapter has detailed how data were collected for the study and how the data were interpreted and analysed.

The subsequent chapters of the thesis are a presentation, interpretation and analysis of the data gathered from the organisations that participated in this study and identified earlier in Figure 4.4. This presentation, interpretation and analysis of the data begin with Chapter 5 which involves Skyline Taxis. Chapter 6 takes into account the presentation, interpretation and analysis of the data gathered from Arup and Chapter 7 is the data presentation, interpretation and analysis for the Milton Keynes Council. Chapters 8 and 9 address the data presentation, interpretation and analysis of the data gathered for Fleetdrive and Home Retail Group respectively. Chapter 10 is a report on the work of the Energy Savings Trust.

5. Data presentation, interpretation and analysis (Skyline Taxis)

5.0 Introduction

This chapter examines the data collected and coded from Skyline Taxis and makes inferences from the responses of the respondents interviewed. These were the Director in-charge of Financial Analysis and the Marketing Manager. This was supplemented with evidence from corporate communications/reports of Skyline, which was used critically and to a limited extent in line with research evidence gathered. The inferences are then analysed using:

- the institutional framework provided by Dillard et al. (2004) as discussed in Chapter 3;
- sustainability accounting modelling as presented by Bebbington et al. (2007) and Fraser (2012), and
- the conceptual framework provided by Gond et al. (2012)

Together this provides an understanding of the roles of control systems in the integration of sustainability within organisational strategy. Ultimately, this chapter brings out issues in relation to the incorporation of social and environmental factors in financial decision-making, in this instance the uptake of electric vehicles in Skyline Taxis.

5.1 Background information about Skyline Taxis

Skyline Taxis is a family run business established in 1985. It has a fleet of about 300 vehicles and is one of the leading taxi-cab companies in Milton Keynes and Buckinghamshire as a whole.

The company operates on the widespread taxi-cab model where the business owners make the financial decisions: the management operates the taxi company, taking trip requests and allocating these to drivers. The drivers own their vehicles which accounts for ninety to ninety-five per cent of the company's total fleet stock with the remainder owned by the company

which it rents out to drivers without cars of their own. The drivers pay ‘rent’⁶ to the company as well as paying for the cost of obtaining and running their vehicles. The company provides the drivers with a booking system, brand advertising and allocates them the booked journeys from clients.

This chapter continues with background information about Skyline, background to Skyline’s involvement with electric vehicles, management control systems in Skyline, sustainability control systems in Skyline, embedding sustainability in organisational strategy in Skyline, embedding sustainability in decision-making in Skyline, incorporating social and environmental factors into decision-making in Skyline’s involvement with electric vehicles. The chapter concludes with a summary and conclusion to the chapter.

5.2 Background to Skyline’s involvement with electric vehicles

The decision to explore how practical an electric vehicle could work as a taxi was initiated by the Marketing Manager of the company. His interest was after he had observed some drivers of the company acquiring hybrid vehicles delivering major cost savings.

With the cab drivers responsible to buying and running their own vehicle, Skyline is only able to provide advice on the option of taking up an electric vehicle rather than a conventional petrol/diesel vehicle. This advice is normally provided to the drivers by the Marketing Manager. The company also trialled the use of electric vehicles as part of their fleet through a loan from Nissan that lasted for six months.

⁶ This is the payment drivers of the company make to the company for providing them with trip allocations, brand advertising, etc.

In this sense, the Marketing Manager is a key reflective organisational participant at the organisational level (see Dillard et al., 2004) as well as a change champion. Even without complete information on the prospects of electric vehicles as taxis, the Marketing Manager pushed for the trial of the new technology. He indicated to the Researcher that:

It was just a thought process of what can we do, what can I do as my job as marketing manager here to market the company further. We are already an established brand, but making it more established to local areas and even further up field we have to do things like this and projects like this to further promote ourselves.

As will be noted in later sections of this chapter, the involvement with electric vehicles that were triggered by the Marketing Manager did not come with a social accounting procedure such as sustainability accounting modelling described by Bebbington et al. (2007) and Fraser (2012), from neither the organisational level, organisational field level, nor the macro/societal level as described by Dillard et al. (2004).

5.3 Management control systems in Skyline Taxis

At the organisational level, Skyline makes use of what Ittner and Larcker (1998) and Tuomela (2005) refer to as traditional accounting based management control systems. These traditional accounting based measures are institutionalised practices in the organisation. Additionally, no form of isomorphism as indicated by Dillard et al. (2004) was observed to be occurring towards the adoption of any new measurement practices. It was revealed in the interview with the Director in-charge of Financial Analysis that the main management control systems utilised by the organisation comprised of; budgeting, costing, total cost of ownership as well as return on investment.

These management control systems in Skyline play a key role in developing strategic plans as indicated by Ittner and Larcker (1998) and Otley (1999) for the achievement of certain ends

and particular means used to attain those ends, (Broadbent and Laughlin, 2009). It is noteworthy however that the management control systems in Skyline are overly concerned with financial measures to the detriment of non-financial measures. This is detailed in Table 5.1 below where particularly no non-financial measures including social and environmental measures were identified. This attribute of the management control systems in Skyline does not conform to the description of management control systems by Tuomela (2005) and Franco-Santos et al. (2012) to comprise both financial and non-financial measures. The financial measures prevalent in Skyline are ‘hard’ and verifiable measures with no room for subjectivity as indicated by Tuomela (2005).

Table 5.1 Dillard et al. (2004)’s institutional framework research instrument (SKYLINE TAXIS)

Coding category	Sub – category	Identifying tag
Macro factors	Overarching influence of political, economic and social systems	
	<ul style="list-style-type: none"> Legislation (licenses) Norms, values etc. 	L(M) EV(M)
	Institutional isomorphism for legitimacy <ul style="list-style-type: none"> Marketing and publicity 	MP(M)
Organisational field	Legitimacy <ul style="list-style-type: none"> Marketing and publicity 	LE(OFMP)
	Power of industrial coalitions and groups <ul style="list-style-type: none"> Support 	

<i>Organisational level</i>		IC(OFS)
	Role of key reflexive organisational participants	
	• Marketing manager	KRI(OLMM)
	Change champion	CC(OLMM)
	• Marketing manager	
	Management control systems	B(MCS)
	• Budgeting	
	• Costing	C(MCS)
	• Total Cost Ownership	TCO(MCS)
	• Return on Investment	Return on Investment ROI(MCS)
	• Payback	PB(MCS)
	Sustainability control systems	
	• None	None

Source: Coding from conducted interviews

5.4 Sustainability control systems in Skyline Taxis

As shown in table 5.1 the assertion of Burritt et al. (2002) and Roth (2008) that companies particularly in developed countries are using cost management tools that can be modified to include environmental and social dimensions (somewhat a departure from traditional management control systems) is not the case in Skyline. The organisation neither has what Gond et al. (2012) refers to as sustainability control systems at the organisational level nor does it have sustainability control systems emanating from neither the organisational field nor the macro level.

Gond et al. (2012) point out that the purpose(s) of traditional management control systems have corresponding sustainability control systems regarding strategic planning, budgeting,

project management, evaluation and reward etc. This seems not to be the situation in Skyline from the data collected from the interviews with the Director in-charge of Financial Analysis and the Marketing Manager and coded and shown in table 5.1 above.

Gond et al. (2012) acknowledge that management controls and sustainability controls are often operated by different groups within the organisation. They however emphasise the need for these controls to be integrated to achieve the desired results. Skyline does not have any sustainability controls of its own let alone integrating them with management control systems as prescribed by Gond et al. (2012).

5.5 Embedding sustainability in organisational strategy (Skyline Taxis)

Gond et al. (2012)'s configuration of different ideal-types of sustainability provides a basis to determine the extent to which sustainability is embedded in the organisational strategy of Skyline. They provide various configurations as shown in chapter two. The basis of these configurations largely depends of the uses and integration of management control systems and sustainability control systems. For management control systems and sustainability control systems to be integrated, they must be present in the organisation in the first place. From the interviews with the Director in-charge of Financial Analysis and Marketing it was apparent as shown in table 5.1, that sustainability control systems do not exist in Skyline, let alone be integrated with existing predominantly financial management control systems.

It is evident from the responses of both interviewees that there were no sustainability control systems in Skyline and hence it would be difficult if not impossible to categorise Skyline into one of the configurations provided by Gond et al. (2012). However, given Skyline's activities

that are sustainability related, it is possible to categorise Skyline under one of the configurations.

From the interview with the Director in-charge of Financial Analysis, he indicated to the Researcher that Skyline uses LED lighting and solar panels. Also Skyline possesses ISO 14001 Environmental Management Systems certification which requires the business to track and report its operational activities relevant to the environment. Though the LED lighting and solar panels as well as the ISO 14001 are sustainability related, they do not constitute sustainability control systems as described by Gond et al. (2012), Roth (2008) and Burritt et al. (2002).

From the configurations provided by Gond et al. (2012) Skyline has peripheral sustainability integration. Only the regular management control systems are used interactively to deploy strategy and the management of sustainability is used as a diagnostic tool i.e. sustainability is considered as social responsibility management and an externality. Skyline does have sustainability management (ISO14001) and sustainability initiatives (PV and LED lighting), but there is no connection between this and management control systems.

Given that management control systems predominate in Skyline with sustainability control systems having no place in Skyline, it may be argued that the most appropriate configuration that best suits Skyline would be compliance driven sustainability strategy where management control systems are mobilised to deploy strategy, but sustainability issues have little attention. The Researcher is of the view that this would be rather harsh given the sustainability activities of Skyline outlined above.

5.6 Embedding sustainability in decision-making in Skyline Taxis

Skyline does have sustainability initiatives and management systems, but these are not linked to management accounting practices. Fraser (2012) and Bebbington et al. (2007) notes that deficiencies in mainstream accountings have led social accountants to seek 'better ways' and 'new imaginings' in order to change unsustainable organisational and social behaviours. Some examples of new social accounting technologies that Fraser (2012) referred to include full cost accounting, sustainability cost calculation and sustainability assessment model. Bebbington et al. (2007) note that sustainability accounting models are an example of the adoption and adaptation of accounting technologies to pursue wider sustainability objectives. Sustainability assessment modelling is seen by Bebbington et al. (2007) as a better tool for decision-making involving sustainable development initiatives compared to other social accounting techniques such as cost-benefit analysis, full cost analysis, and sustainability cost calculation.

Decision-making in Skyline typically makes use of what Ittner and Larcker (1998) and Tuomela (2005) traditional accounting based measures. None of the sustainability accounting technologies indicated by Bebbington et al. (2007) and Fraser (2012) such as full cost accounting, sustainability cost calculation and particularly sustainability assessment modelling. The main tools of budgeting and costing used in Skyline are designed such that they do not give explicit, separate recognition to company-related environmental impacts as indicated by Burritt et al. (2002). Sustainability accounting modelling which according Bebbington et al. (2007) indicates changes in economic, environmental and social capital categories as a result of the activities of the organisation are non-existent with regards to decision-making in Skyline.

5.7 Incorporating social and environmental factors into decision-making for the uptake of electric vehicles

Table 5.1 indicates that the decision-making tools that prevail in Skyline are what Ittner and Larcker (1998) and Tuomela (2005) refer to as traditional accounting based financial measures that do not take into consideration social and environmental factors. In providing advice to drivers exploring the use of electric vehicles as taxis, the Marketing Manager indicated to the Researcher that:

[...] All of these costs have been considered and we're just coming up with that one figure we can say is what it will cost you. This is your fuel cost, your tax, your insurance and sees if they think on that basis it's going to be something they can proceed with. So we are in the process of sorting out those figures. We haven't anything in writing confirmed because it's difficult to calculate all these things because there are so many things to take into consideration.

Apart from not having an explicit decision-making tool in exploring the use of electric vehicles as taxis, it was revealed through a further interview with the Director in-charge of Financial Analysis that traditional accounting based measures were used as described Ittner and Larcker (1998) and Tuomela (2005). Social and environmental considerations were not taken into account as would have been the case with a social accounting technology such as a sustainability accounting model as described by Bebbington et al. (2007) and Fraser (2012).

The Director in-charge of Financial Analysis indicated that:

The management control systems employed by Skyline are standard budgeting/costing tools which are used to assess the financial benefits of hybrids and electric vehicles.

[.....]Essentially the standard financial case (lower operating costs generating improved net earnings) has to be demonstrated. Issues of sustainability are not driving decisions and are only at best semi-peripheral in the decision-making.

Table 5.1 structures responses into the three levels of analysis identified by Dillard et al.

(2004). At the **macro level**, the Marketing Manager and Director in-charge of Financial Analysis made it clear that there was an influence of political, economic and social systems on the decision of Skyline to explore the use of electric vehicles as taxis. This largely in the form of what both officers of the organisation described as ‘support’. This came in the form of legislation i.e. licenses to operate electric vehicles as taxis and societal norms and values that seem to favour organisations that treat the environment with more care. The Marketing Manager indicated that:

[.....]the council has given us permission to licence the vehicle (electric vehicle) and this is the reason why now we have a vehicle on loan for 6 months which we will use in essentially exploring how practical and well a Nissan Leaf could work as a taxi.

There were also macro-level market factors that had an influence on Skyline exploring the use of electric vehicles. The Marketing Manager indicated that:

[.....] I have been conscious that as we move on in life, there are people that are becoming more and more driven or more and more pulled towards people that are considering the environment more sensibly which is what we are trying to do. Some companies have requested Prius vehicles because of the fact that they are better to the environment. So we see there is a place definitely for a company that can have vehicles that are essentially emissions free because a lot of companies look on that very favourably. Everyone wants to reduce their carbon foot prints one way and if we do it without the company knowing, it's beneficial. We may be having electric vehicles on the road but indirectly we are reducing customers and companies, we are reducing their carbon foot prints. And that is without anyone asking us to do it, we just want to do because we think it will be beneficial not only to us as a company to grow, but it again comes down to good press, good marketing, it's another way that we can try and drive more customers to us as a company. So that is what we see the benefits of becoming a green company.

These macro factors may have been expected to lead to some form of accounting change moving towards the models of Bebbington et al. (2007) and Fraser (2012). The Director in-charge Financial Analysis indicated that:

[.....] responsibility for sustainability controls is with the Milton Keynes Council. They have the responsibility for the infrastructure and promotion/publicity activities needed to get drivers to view electric vehicles as viable. Sustainability control systems are not embedded at Skyline as they are expected to be embedded at the Council and the adoption of such controls by Skyline.

This suggests that Skyline were expecting macro level factors to provide some form of accounting change through public policy and not within their company. Additionally it was evident that there was no institutional isomorphism for legitimacy by adopting an accounting change that had come from the macro level because there was none to be adopted. The main reason why electric vehicles are considered by Skyline as taxis can largely be attributable to the legitimacy the organisation would get through marketing and publicity gains.

Moving to the second level, that of the **organisational field**, there are similarities to the macro level. Legitimacy that would accrue to Skyline through the marketing and publicity gains motivated the organisation to explore the use of electric vehicles as taxis.

Additionally there was support coming from other organisations at the organisational field level like car manufacturing companies like Nissan who readily provided Skyline with electric vehicles for trial. Support at the organisational field level did not come in the form of businesses operating within the industry insisting on accounting change particularly for an activity such as the exploration of the uptake of electric vehicles. This support would have come with most likely the introduction of an appropriate social accounting technology such as sustainability assessment modelling as presented by Bebbington et al. (2007) and Fraser (2012).

As already mentioned in section 5.2, at the **organisational level**, the Marketing Manager was a key reflective organisational participant as well as a change champion, who was

keen on seeing to the introduction of electric vehicles into Skyline. However, the enthusiasm with which the Marketing Manager wanted to see electric vehicles becoming part of the vehicle stock of Skyline did not come with an appropriate social accounting technology such as sustainability accounting modelling.

The reflexive individual within Skyline who wanted to see to the introduction of electric vehicles had little accounting knowledge, let alone be able to prescribe an appropriate social accounting approach. Traditional accounting based measures were therefore used that did not take into account social and environmental factors.

5.8 Summary and conclusion

The interpretation and analysis of the data gathered from Skyline Taxis indicates that a number of the issues identified by Gond et al. (2012) as required to embed sustainability in organisational strategy were generally absent. However, it was also clear that though Skyline did not have explicit sustainability control systems, the company can largely be seen as a good sustainability citizen with its usage of LED lightning, solar panels, as well as its ISO 14001 credentials. However, only regular managements control systems are used to deploy strategy.

In making a business case for the uptake of electric vehicles in Skyline Taxis, there is no evidence to show that any appropriate social accounting technology such as sustainability accounting modelling as described by Bebbington et al. (2007) and Fraser (2012) was used or even considered experimentally.

Taking a holistic look at sustainability by keeping an eye on environmental, social and economic sustainability simultaneously as described by Bebbington et al. (2007), Fraser

(2012) and Hopwood et al. (2010) seems to be non-existent in Skyline Taxis. Sustainability seems to be focused on environmental sustainability with little or no mention of how it links up with social and economic/financial sustainability as described by Bebbington et al. (2007) and Fraser (2012).

The decision-making technique(s)/tool(s) that are currently being used by Skyline Taxis to explore an uptake of electric vehicles are very rudimentary and crude. The techniques being used are largely traditional accounting based measures that do not take into consideration non-financial measures as indicated by Ittner and Larcker (1998) and Tuomela (2005).

There are no attempts at incorporating social and environmental factors into the technique(s) being used to encourage the drivers to take up electric vehicles. At the organisational level, organisational field level as well as the macro level, the engagement with a social and environmental project did not come with an appropriate social accounting technology such as sustainability accounting modelling as would have been expected as described by Dillard et al. (2004) in their version of institutional theory. This implies that change could be happening in an organisation at the three levels indicated by Dillard et al. (2004), but this change may not necessarily involve accounting change as it is the case with Skyline.

The following chapter of this thesis is the presentation, interpretation and analysis of the data gathered regarding Arup.

6 Data, presentation, interpretation and analysis (Arup)

6.0 Introduction

This chapter examines the data collected from three interviews conducted with the Arup Group Board Member, together with associated correspondence. The data collected are coded and presented in table 6.1. Self-reported evidence is critically used to a limited extent with the coded data. The observations are then analysed with the institutional framework provided by Dillard et al. (2004) discussed in Chapter 3, sustainability accounting modelling as presented by Bebbington et al. (2007) and Fraser (2012) as well as the conceptual framework provided by Gond et al. (2011, 2012) to understand the role of control systems in the integration of sustainability within organisational strategy. This chapter brings out issues in relation to the incorporation of social and environmental factors in decision-making, in this instance the engagement of Arup with electric vehicles.

The chapter continues with background information about Arup, including their involvement with electric vehicles, their management control and sustainability control systems, embedding sustainability in organisational strategy, and decision-making in Arup. It also examines the incorporation of social and environmental factors into decision-making for the involvement of Arup with electric vehicles, and ends with an overall summary and conclusions.

6.1 Background information about Arup

Arup is an independent firm of designers, planners, engineers, consultants and technical specialists offering a broad range of professional engineering services. Although a private organisation, they have an ethos that through their work, they seek to make a positive

difference in the world⁷. Arup was founded in 1946 with an initial focus on structural engineering. It is a wholly independent organisation owned in trust for the benefit of its employees and their dependants. With no shareholders or external investors the firm is able to independently determine its own priorities and direction as a business. The organisation can therefore engage in activities, such the electric vehicles project, which many public listed companies would not venture into.

Arup has eighteen businesses, with regional and global leaders who are responsible for developing strategy, managing key accounts and developing business. Arup's work for the 2008 Olympics in Beijing reaffirmed its reputation for delivering innovative and sustainable designs that reinvent the built environment.

The financial statements of Arup to 31 March 2014 demonstrate that they remain fully committed to robust and responsible financial management. Arup recorded global income levels of £1,048.3 million, and produced solid pre-tax profits of £28.7 million⁸.

⁷ Arup Corporate Reports 2010, 2011, 2012, 2013 and 2014.

⁸ Arup Corporate Report 2014

6.2 Background to Arup's involvement with electric vehicles

Arup asserts that electric vehicles are an attractive and viable means of urban transportation that are here to stay. This is corroborated by a Group Board Member who is actively involved in Arup's electric vehicles project. He indicated in the interviews with the Researcher that:

We have become interested in low-carbon transport because we think that now it is getting to be the right time for low-carbon vehicles to appear on our streets [...] over the next five to ten years we think that low-carbon vehicles are really going to start appearing on our streets, but only if we can get the right financial, and social, and environmental equation to work.

This quote shows that Arup's interest and involvement with electric vehicles is not only based on environmental sustainability, but just as importantly on economic sustainability.

Arup's involvement with electric vehicles, in the words of the Group Board Member is, 'a novel business case'. This novelty is the need to provide a business case that makes electric vehicles available and affordable to individuals and organisations. Thus the financial case that needed to be made is not so much about justifying the investment in electric vehicles within Arup, as developing a business case for its clients to invest in electric vehicles. Arup's role involves it acting as an intermediary so as to make electric vehicles a part of the car stock on the streets, which will go a long way to reducing carbon emissions. In as much as this role involves taking into account social and environmental considerations, a key element of this intermediary role is about finding the right financial structure for electric vehicles. The role has led to the formation of what the Group Board Member refers to as an enabling company.

The enabling company's role is to make the otherwise prohibitive initial purchase price of electric vehicles more affordable and attractive to individuals and organisations so that they can take advantage of the strong selling point of electric vehicles in the form of low running

costs arising from significantly lower fuel costs. This situation is indicated by the Group Board Member when he states in the interview with the Researcher that:

For almost any car, the electric version is twice as expensive as the ordinary version. So you are paying typically ten thousand pounds for the battery. So that ten thousand pounds on day one is just too much money. Nobody is going to pay that or very few people are going to pay that. If there is an intermediary company who says that I will pay that, but you just pay it back to me if you rent it, then that intermediary company becomes basically a battery leasing company who then leases the battery to the vehicle purchaser. So the vehicle purchaser now is paying a thousand pounds a year to the leasing company. That thousand pounds a year is now similar to what he will pay for petrol.

Arup aims to start by targeting bus and taxi companies because they deem such a segment to be the most economically viable segment given the large mileage driven by their vehicles on a daily basis. The business case for making electrified taxis and particularly buses is highly dependent on another technology. This technology is the ‘wireless charging’⁹ of vehicles to allow buses and taxis to take advantage of the lower cost of electricity compared to petrol and diesel while still covering the mileage they need to do in their daily course of business even with the present limited range of electric vehicles. The Group Board Member noted that, for the electric bus route in Milton Keynes¹⁰, a scheduled changeover point at the end of the route would provide wireless charging:

If you can charge the bus during that 14 minutes with a high rate charge, then you actually put a lot of energy back into the battery – almost as much as you burned coming down

⁹ Wireless or inductive charging systems are where drivers will not have to get out of their vehicles to plug-in, but rather drive and park over a charging pad and energy is transmitted to a receiving pad installed on the vehicle. There is no use of a cable.

¹⁰ For details of the Milton Keynes Electric Bus project see Harris (2012):

www.theengineer.co.uk/energy-and-environment/news/wirelessly-charged-all-electric-bus-route-is-first-for-uk/1014019.article

south. So you don't quite replenish it but you go a long way to replenishing it, and it goes back north again and you do the same thing at Wolverton (the other end of the route). What you are doing is you are not delaying the bus at all.

The business case is largely an infusion of a new technology into the operation of the electric vehicle and the whole model reverts to the conventional leasing model that presently exists. As the Group Board Member indicated:

Financially it's quite a conventional leasing model, while we've got quite an unconventional approach.

The Milton Keynes electric bus trial began in January 2014 (for details see Miles and Potter, 2014) and to date has broadly operated successfully.

6.3 Management control systems in Arup

Broadbent and Laughlin (2009) indicate that a management control system in a generic sense is a control framework which attempts to ensure that certain ends are achieved. This description of what a management control system represents is reflected in Arup developing its own management control system. This management control system is the Arup Management System (AMS). This system though not exactly as sustainability assessment modelling as described by Bebbington et al. (2007), takes into account not only economic/financial considerations but also social and environmental factors. This management control system has been in operation since 2010. It is an integration of people and systems working together. Prior to the integration, Arup had standalone quality, health and safety, and environment systems.

The integration makes the existing management control system in Arup conform to what Ittner and Larcker (1998), Tuomela (2005) and Franco-Santos et al. (2012) describe as systems that have financial and non-financial indicators. This makes the management control system in

Arup differ from the management control systems described by Otley (1999) where such controls are restricted to only financial performance. This is because non-quantifiable factors such as social and environmental factors as indicated by Ittner and Larcker (1998) and Speckbacher et al. (2003) are taken into consideration in Arup's management control system.

Table 6.1 Dillard et al. (2004)'s institutional framework research instrument (ARUP)

Coding category	Sub – category	Identifying tag
<i>Macro factors</i>	Overarching influence of political, economic and social systems	
	<ul style="list-style-type: none"> • Norms, values etc. 	EV(M)
<i>Organisational field</i>	Institutional isomorphism for legitimacy	
	<ul style="list-style-type: none"> • Marketing and publicity 	MP(M)
<i>Organisational level</i>	Legitimacy	
	<ul style="list-style-type: none"> • Marketing and publicity 	LE(OFMP)
	Role of key reflexive organisational participants	
	<ul style="list-style-type: none"> • Board member 	KRI(OLBM)
	Change champion	CC(OLSD)
	<ul style="list-style-type: none"> • Sustainability director 	
	Management control systems	AMS(MCS)
	<ul style="list-style-type: none"> • Arup Management System 	
	Sustainability control systems	
	<ul style="list-style-type: none"> • None 	None

Source: Coding from conducted interviews

Table 6.1 structures the responses from the interviews into the three levels of analysis identified by Dillard et al. (2004). At the **macro level**, it was revealed that there was no influence of the political system in the form of legislation. With such interest shown in the political discourse on climate change it was expected that there would have been direct political influence on businesses such as Arup to encourage the uptake of social and environmental innovations such as electric vehicles. Maintenance of Arup's license to operate and any such other legislation was not an issue. The Group Board Member indicated that:

No, that is not a consideration at all (legislations and regulations). The reasons we are doing the electric bus project and more to other things in this area are much more towards the other things you were asking earlier, which is improving the future positioning of the firm, doing things that motivate our employees, try to do innovative work that gives the firm a reputation for achieving the unusual. All of those things which really, they position well in future to continue doing good business. That is why we do it. In that sense it is about trying to make sure the firm remains one of the best firms in this field, but it is nothing to do with meeting targets or regulations.

Societal norms and values and its influence on the public perception of Arup and subsequent potential to win and retain customers were an influence on Arup in deciding to engage in electric vehicles. The Board Member stated that:

We do take it into account (public perception and the potential to win and retain customers), perhaps one of the most important things that we take into account. How do we measure it? We can only measure it years afterwards. Did you retain clients? Did you get new clients as a result of doing what you did? It's very difficult to make that measurement. The only thing you can do is to monitor the continued success of the firm. If the firm continues to be successful, the best you can say is that the sum total of all the things you did was good. It's very difficult to say quite often whether individual things you did were good.

It is noteworthy that at the macro level there was no influence for accounting change in Arup. There was no notable form of isomorphism observed towards new accounting technologies as a result of the influence of macro level factors.

Moving to the **organisational field**, there are similarities to the macro level. Legitimacy that would accrue to Arup through the marketing and publicity gains motivated the organisation to engage with electric vehicles. However the power of industrial coalitions was neither an influence on the decision to engage with electric vehicles nor was there any form of isomorphism towards new accounting technologies as a result of the influence of industrial coalitions and groups.

At the **organisational level**, the Group Board Member was a key organisational individual as well as a change champion, who was committed to ensuring Arup engages with electric vehicles. The importance of the Group Board Member in seeing to the execution of the organisation's electric vehicle cannot be overemphasised. Even in cases where fees had to be charged involving electric vehicles, he had a huge influence on the final decision. He indicated that:

[...] The firm took a strategic decision to reduce the standard scale of fees on both projects in the interest of becoming engaged in what we saw as ground-breaking activity. The decision to discount the fees was taken by me.

The sustainability director who is also a Group Board Member engages in sustainability related activities that go to indicate Arup's commitment to sustainability. He is an internal sponsor who sees to the identification and celebration of sustainability success. The Group Board Member noted that:

We have this guy on the group board who is the Sustainability Director and part of his way of doing things is to look for good results and to celebrate success and we have in-house magazines which are to celebrate our projects and there is a general desire if you've done a good project, good sustainability aspect to it, to get it written up in the in-house magazines.

6.4 Sustainability control systems in Arup

Arup's ISO 14001 certification does not represent self-developed sustainability control systems as described by Gond et al. (2012). The ISO 14001 certification is a generic management standard that suits all types of organisations. It enables them to reduce waste and cost through environmental management.

There are no such sustainability control systems in Arup specifically for the strategic planning, budgeting, project management, evaluation and reward etc. as indicated by Gond et al. (2012).

6.5 Embedding sustainability in organisational strategy at Arup

A repertoire of different configurations of ideal-types of sustainability is provided by Gond et al. (2012). These configurations largely depend on the uses and integration of management control systems and sustainability control systems.

From the data gathered from the interviews with the Group Board Member and coded and shown in table 6.1, Arup has no sustainability control systems of its own and consequently no integration with existing management control systems. This seems to suggest that Arup cannot be categorised as one of the configurations provided by Gond et al. (2012) and discussed in Chapter 2.

Apart from the fact that Arup is ISO 14001 certified, the researcher established from the interviews other qualities of Arup at the organisational level that largely makes the organisation possess sustainability credentials. Firstly, the board and senior management of Arup is committed to sustainability to the extent that the organisation has a Group Sustainability Director. The Group Sustainability Director looks for good sustainability results and celebrates success. Secondly, Arup also provides sustainability training for its staff on

sustainability issues. To enhance effective sustainability training, Arup has in partnership with the University of Cambridge designed a master's level module in sustainability. Also sustainability is reported in Arup's annual corporate reports.

Given Arup's activities outlined above, that are sustainability related, it is possible to categorise Arup into one of the configurations. Even though Arup does not have sustainability control systems of its own as indicated by Gond et al. (2012) and Roth (2008) the Researcher found out that sustainability is a major strategic issue for Arup. Sustainability strategy and overall business strategy do considerably match.

6.6 Embedding sustainability in decision-making in Arup

Arup does not have sustainability control systems of their own but rather have sustainability initiatives and management systems. Fraser (2012) and Bebbington et al. (2007) notes that deficiencies in mainstream accountings have led social accountants to seek 'better ways' and 'new imaginings' in order to change unsustainable organisational and social behaviours. According to Bebbington et al. (2007), sustainability accounting modelling is an example of the adoption and adaptation of accounting technologies to pursue wider sustainability objectives. Sustainability assessment modelling is seen by Bebbington et al. (2007) as a better tool for decision-making involving sustainable development initiatives.

Decision-making in Arup is undertaken using the Arup Management System that has been indicated in section 6.3. This cannot be said to be using exclusively what Ittner and Larcker (1998) and Tuomela (2005) refer to as traditional accounting based measures. It can be seen from section 6.3 of this chapter that social and environmental considerations are taken into account when making decisions.

6.7 Incorporating social and environmental factors into decision-making for the uptake of electric vehicles

From the data gathered and coded from the interviews with the Group Board Member, it is clear that decision-making in Arup regarding electric vehicles does not only include financial indicators, but non-financial ones as well. The management tools used both financial and non-financial tools as indicated by Franco-Santos et al. (2012), Tuomela (2005) and Ittner and Larcker (1998). In affirming that the financial aspects of the project had been done, the Group Board Member indicated that:

[.....] We have done all the financial projections for the bus (and the taxis) and we believe the commercial cases are positive.

Arup also took into account non-financial measures namely; learning, reputational enhancement, and employee satisfaction. The learning dividends that would accrue to Arup by engaging with electric vehicles were taken into account in Arup's decision-making. This comes in the form of competitive advantage, innovation and new products that come with such an engagement. These advantages are also implicit in social accounting technologies described by Fraser (2012) and Bebbington et al. (2007). The Group Board Member indicated that:

[....] The firm (Arup) believes low-carbon future transport systems are an important segment in which the firm must be well placed. The opportunity to 'learn by doing' is therefore regarded as valuable and this makes it worthwhile taking a higher-than-normal risk on the money.

Though not financially quantifiable as can be seen from the Group Board Member's statement, Arup also took into account the contribution such an engagement would make to the brand reputation of the organisation. He indicated that:

[....] If such 'cutting edge' projects are delivered successfully, the firm becomes known for doing good work and this bolsters its reputation for excellence.

Employee satisfaction was an issue that was also taken into account in making the decision to engage with electric vehicles. Arup is employee-owned and sets a high score against job satisfaction. The Group Board Member indicated how this was taken into account in the decision to engage with electric vehicles by stating that:

Care and concern for the environment are subjects which we know (Arup) know to be important to our staff, so using our skills and knowledge to work on clean future transport systems is much appreciated at the working level.

An explicit social accounting technology such as the ones described by Fraser (2012) and Bebbington et al. (2007) were not used in the decision to engage in electric vehicles in Arup. As outlined above, both financial and non-financial considerations similar to that of social and accounting technologies were considered. These factors were largely unquantifiable. .

6.8 Summary and conclusion

The interpretation and analysis of the data gathered from Arup indicates that though Arup does not have explicit sustainability control systems as described by Gond et al. (2012), the organisation is very committed to sustainability through its activities and its ISO 14001 certification.

The assertion of Gray (2011, 2006), Burrit and Schaltegger (2010) and Hopwood et al (2010) that conventional accounting continues to neglect corporate sustainability issues and leads to distorted information in decision-making is not the case in Arup. Decision-making in Arup

clearly takes into account social and environmental considerations though not exactly as the social accounting technologies described by Bebbington et al. (2007) and Fraser (2012).

It was also revealed that though there could be some influence of macro, organisational field, and organisational level factors on the organisation's decision to engage with a social and environmental innovation such as electric vehicles, this does not necessarily result in accounting change.

The need for a high-level person to take the risk and responsibility for a social and environmental innovation was revealed. The decision of Arup to engage with electric vehicles was initiated and executed at the strategic level. Operational level staffs were not active in the decision-making.

The following chapter of this thesis is the presentation, interpretation and analysis of the data gathered from the Milton Keynes Council.

7 Data presentation, interpretation and analysis (Milton Keynes Council)

7.0 Introduction

This chapter examines the information from the three interviews with the Head of Transport Services, the Carbon Manager and the Capital Finance Manager of Milton Keynes Council. This is combined with other information such as from the corporate website, local transport plan (LTP3) and the council's core strategy document. The data collected from the interviews are coded and presented in table 7.1 using the institutional framework provided by Dillard et al. (2004) as discussed in Chapter 3.

The analysis is done with Dillard et al. (2004)'s institutional framework, sustainability accounting modelling as presented by Bebbington et al. (2007) and Fraser (2012), and the conceptual framework provided by Gond et al. (2011, 2012) to understand the role of control systems in the integration of sustainability within organisational strategy.

The chapter continues with background information about the Milton Keynes Council, including their involvement with electric vehicles, their management and sustainability control systems, embedding sustainability in organisational strategy and decision-making in the Milton Keynes Council. The chapter also examines the incorporation of social and environmental factors into decision-making for the involvement of the Council with electric vehicles, and ends with an overall summary and conclusions.

7.1 Background information about Milton Keynes Council

At the heart of the activities of Milton Keynes Council is its core strategy document¹¹ which is crafted for delivering other strategic plans, particularly the Sustainability Community Strategy¹². A study of the activities and actions of Milton Keynes Council calls for an examination of the core strategy of the Council. It is noteworthy that the core strategy of the Council was refreshed in October 2010 to reflect the new changing agenda of the coalition government. This largely indicates the extent to which activities of the Council are dependent on the agenda or priorities of the central government.

7.2 Background to Milton Keynes Council's involvement with electric vehicles

The Council's interest in electric vehicles emanated from the desire of the government to electrify the UK transport system. The Council put in a bid for the Plugged-In Places (PIP) bid and was selected to pilot the infrastructure required to support wider electrification of road transport. It is noteworthy that the Council also has a policy to promote alternative ways of travelling.

¹¹ www.milton-keynes.gov.uk/core-strategy-publication

¹² Milton Keynes Council Core Strategy, Sustainability Appraisal Report, 2010.

7.3 Management control systems in the Milton Keynes Council

The interview with the Capital Finance Manager established that the Council typically uses what Ittner and Larcker (1998) refer to as traditional accounting based measures. These systems are mainly used for capital and revenue budgeting as indicated in table 7.1 below. These management control systems restrict themselves to only financial performance (as noted by Otley, 1999). They are also ‘hard’ and there is no room for subjectivity in their usage. The control systems do not have both financial and non-financial indicators as indicated by Tuomela (2005) and Franco-Santos et al. (2012).

Table 7.1 Dillard et al. (2004)’s institutional framework research instrument (Milton Keynes Council)

Coding category	Sub - category	Identifying tag
Macro factors	Overarching influence of political, economic and social systems	
	<ul style="list-style-type: none"> Norms, values etc.EV(M) 	
	Institutional isomorphism for legitimacy	
	<ul style="list-style-type: none"> Marketing and publicity 	MP(M)
Organisational field	None	None
Organisational level	Management control systems	
	<ul style="list-style-type: none"> Capital budgeting B(MCS) Revenue budgeting B(MCS) 	
	Sustainability control systems	
	<ul style="list-style-type: none"> None 	None

Source: Coding from conducted interviews

At the **macro level**, the Council's interest in electric vehicles, as indicated by the Head of Transport Services, emanated from the overarching strategy of the government to electrify UK road transport. Prior to its involvement with electric vehicles, the Council had national indicators which it complied with. These indicators originated from central government. This amounted to the overarching influence of political systems that Dillard et al. (2004) referred to. The Carbon Manager indicated that:

Going back to the previous government, there were clearer national indicators which local authorities were told basically to comply with. One was in terms of a sort of Milton Keynes wide carbon emissions and another one was purely for the emissions for the Council's own activities.

The adoption and compliance with the national indicators of the government by Milton Keynes Council is largely a form of institutional isomorphism for legitimacy as indicated by Dillard et al. (2004) at the macro level. Though the Council still complies with these national indicators which were provided by central government, these indicators do not presently have the primacy they had previously. The government's desire to electrify road transport did not come with any specific indicators. The Carbon Manager indicated that:

[....]When the present government came in, to all intents and purposes, they abandoned those indicators or suddenly ended any commitment or obligation on the local authority to abide by anything. It ended but in practice the indicators have still carried on but in a slightly different form. It was based on statistics about Milton Keynes wide emissions. So we can still see how Milton Keynes' are changing from year to year.

At the **organisational field level**, neither competitive pressure nor the power of industrial coalitions and groupings were a driving force of change for the involvement and assessment of social and environmental initiatives. This can be attributable to the Council being a public

institution where competitive pressure and industrial coalitions and groupings are generally non-existent.

Unlike the situation in Arup (as indicated in chapter 6), at the **organisational level**, key organisational participants, change champions or internal sponsors are not responsible for the involvement and the assessment of social and environmental projects in the Council. From the interview with the Carbon Manager, it was noted that though his designation seems to suggest that he is a change champion or an internal sponsor, practically he is not. He indicated that:

I am actually in a team called the sustainability team although in fact the scope of our team isn't very wide and certainly doesn't cover all aspects of sustainability. So there are other sustainability issues that are dealt with elsewhere. So it's probably not an appropriate name.

It is noteworthy that the role of the Carbon Manager involves trying to reduce the carbon emissions of Milton Keynes. The role does not specifically involve influencing decision-making regarding social and environmental initiatives.

Since Milton Keynes Council has so documented with respect to sustainability as can be seen from the Council's core strategy, local transport plan¹³ as well as its low-carbon prospectus, it seemed there would be an internal sponsor or change champion at the intra-organisational level as indicated by Dillard et al. (2004). However, these were both absent as evidenced by the Carbon Manager when he responded regarding whether there were particular people in the Council who promote sustainability and celebrate success. He stated that:

No, not really. Not in terms of sustainability. As I said because the Council's programmes are not really coordinated in that way, they are sort of fragmented. There would be individual people who promote individual sustainability issues and things but not in that way.

¹³ www.milton-keynes.gov.uk/transport-strategy

From the Carbon Manager's response though there is no specific person or group of people within the Council who are dedicated to promoting and celebrating sustainability success, there could be individuals performing such roles in a fragmented way but this does not amount to the internal sponsors and change champions referred to by Dillard et al. (2004).

There is some amount of internal consensus building in terms of the core strategy of the Council resulting in the development of the local transport plan 3 which was developed as a result of consultations with key stakeholders not excluding employees of the Council.

However, this internal consensus is largely not followed up with adequate resource allocation to achieve the execution of the consensus that has been built. This observation is buttressed by the Carbon Manager when he indicated to the Researcher that:

To some extent there is also an element that it's easy for Councillors and senior managers to make a decision to support something as long as they don't have to put in resources and I think there is a tendency to possibly want to decide something on paper as it were, which looks good. But I think it is rather fairly really to be able to back it up with meaningful resources.

7.4 Sustainability control systems in Milton Keynes Council

From Table 7.1 above, the Milton Keynes Council has not developed and used any tools that explicitly include environmental and social dimensions as indicated by Burritt et al. (2002) and Roth (2008). The organisation seems to be theoretically committed to sustainability in its core strategy document, local transport plan 3, and its low-carbon prospectus. However there are neither self-developed nor adopted sustainability control systems in the Council.

7.5 Embedding sustainability in organisational strategy in the Milton Keynes Council

Having no self-developed or adopted sustainability control systems in the Milton Keynes Council suggests that they cannot be categorised into any of the configurations of ideal-types of sustainability provided by Gond et al. (2012). This is because these configurations of ideal-types of sustainability are a result of the integration of management control systems. The Corporate Finance Manager indicated to the researcher that:

[....] There are no sustainability control systems in the Council, except that there is an overarching theme of sustainability in the Council that is not integrated.

As already indicated in section 7.3, the Council strategically seems to be committed to sustainability in its core strategy document, local transport plan 3 as well as the low carbon living. However when it comes to the crunch, the resources, processes and procedures are not in place to implement this strategic commitment. The Carbon Manager confirmed this when he indicated that:

The Councillors, members of the Council, have made good decisions in terms of saying they are committed to tackling climate, a low-carbon programme and they've agreed a low-carbon strategy which is quite an ambitious target to reduce carbon. However, in a more practical sense in terms of the resources necessary to deliver on that target, focus has not been so good.

The inadequate processes and procedures in the Council regarding sustainability were confirmed to the Researcher by the Carbon Manager when he stated that:

The Council doesn't have any kind of environmental management system in place..... It's a rather fragmented approach. We do have some processes like project management mechanisms that require all projects to identify environmental impact. We have a sort of a checklist to our committee reports which has to consider environmental issues.

The situation in the Council can be categorised as strategy emergence through sustainability as described by Gond et al. (2012). In such a situation, management control systems and sustainability control systems are not integrated, but the sustainability is mobilised strategically by the top management to deploy a sustainability strategy.

7.6 Embedding sustainability in decision-making in the Milton Keynes Council

From the foregoing in sections 7.2, 7.3 and 7.4, seeking 'better ways' and 'new imaginings' to change the unsustainable organisational and social behaviours as a result of the deficiencies with mainstream accountings as indicated by Fraser (2012) and Bebbington et al. (2007) is not the case in the Milton Keynes Council. The Council's decision-making does not make use of any of the new social accounting technologies, including sustainability accounting modelling.

Though there is an overarching theme in the Council of a commitment to sustainability, decision-making in the Council is done using what Ittner and Larcker (1998) and Tuomela (2005) describe as traditional accounting based measures. From the interviews with the Corporate Finance Manager, Carbon Manager and the Head of Transport Services, the Council is committed to sustainability at the strategic level. However there is no evidence to show that decision-making particularly at the operational level takes sustainability into account.

Management accountants or individuals in the Council who are charged with the performance of the accounting function such as the Capital Finance Manager are not directly involved in decision-making particularly with social and environmental projects.

7.7 Incorporating social and environmental factors into decision-making for the involvement with electric vehicles

The data gathered and coded from the interviews with the Head of Transport Services, Carbon Manager and Corporate Finance Manager indicates that there is no evidence to show that decision -making in the Council regarding electric vehicles explicitly took into account social and environmental considerations. The researcher gathered from the Corporate Finance Manager that:

]/...[there was no business case for the involvement with electric vehicles within the Council, if there was one it would have been known to me.

The Researcher also gathered that public consultation and the innovation and learning that would come with the involvement with electric vehicles were taken into account. The decision however was at the strategic level with no particular use of any management control system. The innovative sustainability accounting technologies indicated by Bebbington et al. (2007) and Fraser (2012) were not used.

7.8 Summary and conclusion

The presentation, interpretation and analysis of the data gathered from Milton Keynes Council indicates that most of the issues identified by Gond et al. (2012) as well as Hopwood et al. (2010) required to embed sustainability in organisational strategy were absent. It was clear that though the Council has an overarching strategic theme of sustainability, there are no specific systems in the organisation to ensure that sustainability is practically embedded.

Conventional accounting which Gray (2011, 2006), Burritt and Schaltegger (2010) and Hopwood et al. (2010) argue neglect corporate sustainability issues, dominate decision-making

in the Milton Keynes Council. Innovative sustainability accounting technologies such as sustainability accounting modelling as described by Bebbington et al. (2007) and Fraser (2012) are not used in the Council.

It was revealed that at the macro, organisational field and organisational levels, there was no evidence to show that accounting change as envisaged by Dillard et al. (2004)'s institutional framework occurred. It is noteworthy that particularly with the involvement with electric vehicles, the central government's interest to electrify road transport at the macro level triggered the involvement of the Council. However this did not come with any form of accounting change

The following chapter of this thesis is the presentation, interpretation and analysis of data gathered from Fleetdrive Limited. Fleetdrive is a car leasing company that is interested in making electric vehicles available and affordable to organisations and individuals.

8 Data presentation, interpretation and analysis (Fleetdrive Management Limited) - Fleetdrive

8.0 Introduction

This chapter examines information from three interviews conducted with the Managing Director of Fleetdrive Limited, together with associated correspondence. The data collected are coded and presented in table 8.1. Self-reported evidence is critically used to a limited extent with the coded data. The observations are analysed with the institutional framework provided by Dillard et al. (2004) discussed in chapter 3. Sustainability accounting modelling as presented by Bebbington et al. (2007) and Fraser (2012) as well as the framework provided by Gond et al. (2012) also informs the analysis in this chapter. The chapter brings out issues in relation to the consideration of social and environmental factors in financial decision-making, in this instance the engagement of Fleetdrive Limited with electric vehicles.

The chapter continues with background information about Fleetdrive, including their involvement with electric vehicles, their management control and sustainability control systems, embedding sustainability in organisational strategy, and decision-making in Fleetdrive. The chapter also examines the consideration of social and environmental factors into the decision for the involvement of Fleetdrive with electric vehicles, and ends with an overall summary and conclusions.

8.1 Background information about Fleetdrive

Fleetdrive is a privately owned company that was established in 1994. It specialises in among other services: car and van contract hire, personal car leasing, accident management, fleet

management as well as providing its clients with advice on a variety of vehicle related issues including but not limited to leasing versus purchase, fuel costs and company car tax.

8.2 Background to Fleetdrive's involvement with electric vehicles

Fleetdrive is one of the car leasing companies that is actively involved with the provision and promotion of electric vehicles to its customers. Fleetdrive has a segment of the business dedicated to electric vehicles. This segment of the business is called Fleetdrive electric. A comprehensive website provides customers and prospective customers with electric vehicle related information has been developed solely for this segment of the business. As of March 2015, Fleetdrive was offering the Nissan Leaf from a leasing price of £199 per month plus VAT¹⁴.

Fleetdrive currently has electric vehicles that it uses for demonstrations and trials with organisations that are interested in taking up electric vehicles. In the Milton Keynes area, Fleetdrive has had trials with both Milton Keynes Council and Skyline Taxis who are also examined in this study. This was revealed when the Managing Director of Fleetdrive indicated to the Researcher that:

Milton Keynes Council has had a few trials with us and we keep close links with those guys. We've got a few potential ones through our links with MK Council and again no one has converted to be customers. There is a cab firm (Skyline), but no one else in the area is really keen so far.

The Fleetdrive electric vehicle initiative was initiated by the Managing Director who can be largely seen to be a key organisational participant, internal sponsor as well as a change champion at the organisational level (Dillard et al., 2004).

¹⁴ See www.fleetdrive-electric.com

The Managing Director of Fleetdrive initiated the organisation's involvement with electric vehicles. He is convinced that though currently it seems the electric vehicles market is not impressive, in the near future the market would be buoyant. In the interviews with the Researcher, he indicated that:

As yet the market has still hasn't taken off. I still truly believe that over the next five years there will be quite a sizeable market for this type of product. We are just trying to learn about them. Because I think there are so many myths and falsehoods about what electric vehicles will and won't do. We are spending our time to get some experience at the moment. Really there is not a lot of money to be made out of it. I've sold two vehicles and we've been at this a year. We've done demonstrations but it's just not there yet. I guess it's the potential, yeah. Just like new things, but I can see that there will be a sizeable market as we move along. With the current estimates, depending on who you talk to it will be between five and twenty per cent of the vehicle market by 2020.

The Managing Director is very resilient in his resolve to see to it that Fleetdrive's electric vehicle project yields positive financial results, though currently the initiative faces several challenges because of the low uptake of electric vehicles. He stated that:

[...] if at the end of June 2013, when all the things I have put in place run out and there is still no market, then I think I would still keep going because I truly believe this market is going to happen at some point. I believe it would make commercial sense at some point because of the fuel costs which would likely go up.

Fleetdrive is still currently in the electric vehicles market and indicate that they have leased over 300 electric vehicles. This suggests that they have developed a sector within their business for electric vehicles.

8.3 Management control systems in Fleetdrive

As shown in Table 8.1, the management control systems in Fleetdrive are largely used for budgeting purposes.

The management control systems in Fleetdrive are designed particularly for the achievement particular ends as indicated by Broadbent and Laughlin (2009). Management controls in the organisation tend to restrict themselves to financial performance as observed by Otley (1999). The management control systems are what Ittner and Larcker (1998) describe as traditional accounting based measures.

Table 8.1 Dillard et al. (2004)’s institutional framework research instrument (Fleetdrive)

Coding category	Sub - category	Identifying tag
<i>Macro factors</i>	None	None
<i>Organisational field</i>	Legitimacy	
	<ul style="list-style-type: none"> Marketing and publicity 	LE(OFMP)
<i>Organisational level</i>	Role of key reflexive organisational participants	KRI(OLMD)
	<ul style="list-style-type: none"> Managing director 	
	Change champion	CC(OLSD)
	<ul style="list-style-type: none"> Managing Director 	
	Management control systems	B(MCS)
	<ul style="list-style-type: none"> Budgeting 	
	Sustainability control systems	
	<ul style="list-style-type: none"> None 	None

Source: Coding from conducted interviews

Table 8.1 structures the responses of the interviews into the three levels of analysis identified from Dillard et al. (2004)’s institutional framework discussed in Chapter 2.

At the **macro level**, neither overarching influence of political, economic and social systems nor institutional isomorphism for legitimacy are attributable for involvement and assessment of social and environmental projects in Fleetdrive. There was no evidence to suggest that

Fleetdrive was moving towards the adoption of any social accounting technologies such as those described by Bebbington et al. (2007) and Fraser (2012).

Legitimacy that would accrue to Fleetdrive through marketing and publicity gains was observed to have influenced the involvement of the organisation with a social and environmental initiative such as the involvement with electric vehicles. However this did not come with any accounting change in the organisation at the **organisational field level**. Also industrial coalitions and groupings do not exert any pressure on Fleetdrive for the adoption of any social accounting technologies for the assessment of social and environmental projects. Actually, other organisations in Fleetdrive's industry thought Fleetdrive had got it wrong by engaging with a social and environmental project. Regarding its electric vehicle initiative the Managing Director indicated that:

[.... In fact most of the people in the leasing thing think I am mad with this electric vehicle thing.

At the **organisational level**, the Managing Director is a key reflexive organisational participant as well as a change champion regarding Fleetdrive's engagement with social and environmental project such as electric vehicles. He indicated to the Researcher that:

I think because this has been my hobby horse (Fleetdrive's electric vehicle initiative) and I'm the MD, at least that is what they tell me, so we engage in it.

However there is no evidence to show that the enthusiasm and commitment of the Managing Director came with any adoption of an appropriate social accounting technology.

8.4 Sustainability control systems in Fleetdrive

As indicated in table 8.1, Fleetdrive does not have any controls that include social and environmental dimensions as described by Burritt et al. (2002) and Roth (2008). There are no self-developed sustainability control systems in Fleetdrive for strategic planning, budgeting, evaluation and reward, project management etc. As indicated by Gond et al. (2012).

8.5 Embedding sustainability in organisational strategy in Fleetdrive

Gond et al. (2012) provide different configurations of ideal-types of sustainability. These configurations depend on the uses and integration of management control systems and sustainability control systems.

The data gathered from the interviews with the Managing Director, coded and shown in table 8.1 indicates that Fleetdrive has no sustainability control systems of its own. Therefore there is also no integration with existing management controls. Unlike Skyline and Arup, discussed in chapters 5 and 6 respectively, Fleetdrive does not possess any sustainability credentials such as ISO 14001 certification, sustainability training for staff and board and senior management commitment to sustainability. The Managing Director indicated to the Researcher that:

[...] I won't do it just for the social (environmental) side of it. [...] My gut tells me that at some point in the next five years, this will take off quite substantially. Whether it's because these prices come down, but it all gets into its place and if we've made sure that we're there ready to catch the apples as they fall, then we've done our job.

Clearly, doing the electric vehicle project was not as a result of a commitment to sustainability, but mainly because of the long-term financial gains that would accrue to the organisation.

Fleetdrive can be seen to have peripheral sustainability integration according to Gond et al. (2012)'s ideal-type configurations. This is because it is evident from the foregoing that only

the regular management control systems are used to deploy strategy. Sustainability or social responsibility management is regarded mainly as an externality. The Managing Director indicated to the Researcher that:

Very much to the background yes, but that is not the motivator at all. We don't have like a CSR (Corporate Social Responsibility) policy or anything.

8.6 Embedding sustainability in decision-making in Fleetdrive

As shown in table 8.1 and indicated in section 8.4, Fleetdrive does not have sustainability control systems of their own. Neither do they have sustainability credentials and management systems. Fleetdrive has existing management control systems, however this cannot be said to be linked with sustainability control systems. This is because the latter is non-existent.

Decision-making in Fleetdrive cannot to be done using any of the sustainability accounting technologies described by Bebbington et al. (2007) and Fraser (2012), particularly sustainability accounting modelling. The dominant decision-making tools in Fleetdrive are traditional accounting based measures as described by Ittner and Larcker (1998). The decision-making tools (primarily budgeting), are not made up of financial and non-financial indicators as described by Tuomela (2005) and Franco-Santos et al. (2012)

Bebbington et al. (2007) argue that sustainability accounting modelling is a superior social accounting technology. However this is not used in Fleetdrive. Changes in economic, environmental and social capital categories are not accounted for in decision-making in Fleetdrive.

8.7 Incorporating social and environmental factors into decision-making for the uptake of electric vehicles

From the data gathered and coded from the interviews with the Managing Director, decision-making in Fleetdrive regarding electric vehicles did not take into account social and environmental factors. The tools used were accounting based financial measures which did not consider social and environmental factors. Commercial success was the bottom-line of the decision-making regarding engagement with electric vehicles in Fleetdrive. The Managing Director indicated to the Researcher that:

[...]I truly believe this market is going to happen at some point. I believe it would make commercial sense at some point because of the fuel costs which would likely go up.

Though commercial success was the bottom-line, other non-quantifiable factors such as the learning advantages that come with a new technology such as electric vehicles, as well as the potential for an environmental project such as engaging with electric vehicles, were remotely taken into account. As the Managing Director indicated to the Researcher that:

We understand the qualitative impact that these issues have on businesses but have not done that quantitatively. I wouldn't even bother trying to measure it because I guess it would be the same way as saying would I bother trying to quantify the fact that I sell good service as part of what we do.

8.8 Summary and conclusion

The interpretation and analysis of the data gathered from Fleetdrive indicates that most of the issues indicated by Gond et al. (2012) as well as Hopwood et al. (2010) as required to embed sustainability in organisational strategy were absent

Decision-making in Fleetdrive is guided by conventional accounting which according to Gray (2011, 2006) neglects corporate sustainability issues. Decision-making in Fleetdrive, and particularly with electric vehicles, does not consider social and environmental issues as recommended by Bebbington et al. (2007), Hopwood et al. (2010) and Fraser (2012).

The macro field, organisational field, and organisational level factors had little influence on the decision for Fleetdrive to engage with electric vehicles. The three levels of analysis identified by Dillard et al. (2004) also did not lead to any accounting change at any level.

The need for a high-level person to take the risk and responsibility for a social and environmental innovation was re-emphasised by the role played by the Managing Director. The decision to engage with electric vehicles in Fleetdrive was largely that of the Managing Director who is located at the strategic level in the business. Management accountants and operational staff did not play any role in the decision-making regarding electric vehicles.

The following chapter of this thesis is the presentation, interpretation and analysis of data gathered from Home Retail Group.

9 Data presentation, interpretation and analysis (Home Retail Group)

9.0 Introduction

This chapter examines the interview with the Transport Manager responsible for the Home Retail Group car fleet with a current operating budget of eleven million pounds. He is not responsible for freight vehicles and vans. This is combined with other information, obtained mainly through contacts with the World Finance Manager of Home Retail Group, together with information from the corporate website and corporate responsibility reports. The data collected from the interviews are coded and presented in table 9.1 using the institutional framework provided by Dillard et al. (2004) as discussed in chapter 3.

The analysis uses the Dillard et al. (2004)'s institutional framework, sustainability accounting modelling as presented by Bebbington et al. (2007) and Fraser (2012), and the conceptual framework provided by Gond et al. (2012) to understand the role of control systems in the integration of sustainability within organisational strategy.

This chapter continues with background information about Home Retail Group, including their involvement with electric vehicles, their management and sustainability control systems, embedding sustainability in organisational strategy in decision-making in Home Retail Group. The chapter also examines the incorporation of social and environmental factors into the decision-making for the involvement of Home Retail Group with electric vehicles, and ends with an overall summary and conclusions

9.1 Background information about Home Retail Group

Home Retail Group is a publicly listed company made up of three key businesses (i.e. Argos, Homebase and Habitat UK). The company specialises in home and general merchandise. As at 1 March 2014, the group had net assets of £2,673.5 million, sales of £5,663.0 million, profit before tax of £71.2 million and profit after tax of £54.0 million¹⁵.

Home Retail Group prides itself on being a socially responsible organisation and has dedicated areas on its website on corporate responsibility. The company also publishes annual corporate responsibility reports that seek to show the basis for the organisation engaging in what it calls ‘good business’. The organisation was awarded the Carbon Trust Standard in 2010 which certifies that the company has genuinely reduced its carbon footprint¹⁶.

Home Retail Group’s website indicates that pursuing ‘the basis of good business’ makes good commercial sense through making the organisation more efficient by reducing waste and cutting energy consumption and the work with local communities engages staff and customers and reinforces corporate reputation. They do this through:

- Keeping clean and green
- Shopping for tomorrow
- Sourcing with care
- Building a great place to work

¹⁵Home Retail Group Annual Report 2014.

¹⁶ Home Retail Group Corporate Responsibility Report 2010.

- Being a good neighbour.

9.2 Background to Home Retail Group's involvement with electric vehicles

The involvement of Home Retail Group with electric vehicles is the initiative of the Transport Manager. He revealed that at least thirty staff members of Home Retail Group had trialled electric cars through an arrangement the company had with both Renault and Peugeot and the feedback was that the electric vehicle was as effective as its petrol/diesel counterparts. He distinguished the various categories of business users of vehicles in Home Retail Group by indicating to the Researcher that:

We run about just thirteen hundred company cars and they are split between essential users who qualify because they do over ten thousand business miles a year and perk drivers who simply get a car as a perk as part of their job.

The final decision to take up an electric vehicle as a company car is the choice of the employees of Home Retail Group who have qualified for a company car. They chose which car they want from a list of those available to in particular price categories. This was revealed in the interview with the Transport Manager when he indicated that:

I want to buy three hundred and fifty new cars next year. How many of those cars will be electric will be determined by the individual choice of the driver rather than by any more formal activity of the company. In a way the introduction of electric vehicles to the fleet is almost a kind of operational matter rather than policy decision.

This choice by the employee provides an interesting parallel for the uptake of electric vehicles in Home Retail Group to that in Skyline Taxis where the ultimate decision to take up electric vehicles is the prerogative of the drivers and the management of the business only provides advice to aid the decision-making. The typical cab/taxi company model leaves the final

decision in the hands of the drivers but as can be seen from the statement of the Transport Manager, even large companies such as Home Retail Group have a similar situation.

Home Retail Group unlike many other organisations has a purchase model rather than a lease model in the acquisition of company cars. The Deloitte model of total cost of ownership which was described in Chapter 2 is the method used in assessing the uptake of company cars in Home Retail Group. It is noteworthy however that instead of the widely used three years in assessing the total cost of ownership, Home Retail Group uses a four year period which plays to the strengths of any vehicle that has a high initial purchase price and a low running cost such as an electric vehicle.

9.3 Management control systems in Home Retail Group

As shown in Table 9.1, the management control systems in Home Retail Group are largely used for budgeting and costing. These systems identified in Home Retail Group tend to restrict themselves to what Otley (1999) refers to as financial performance. They are traditional accounting based (Ittner and Larcker, 1998) measures used for the attainment of financial goals. The Transport Manager indicated to the Researcher that he had an annual operating budget for fleet vehicles and he had to operate within this budget. An example of costing used in Home Retail Group is the Deloitte model of total cost of ownership. The organisation uses a modified form of this model for the assessment of vehicles. The Transport Manager indicated to the Researcher that:

[...] we use the Deloitte modelling tool but then we've basically built our own version of that – it's slightly customized to us, we've built in ours. It's fundamentally based on purchase of the car after any discounting pence per mile maintenance figure which we get from fleet support group, who do all our maintenance for us..... Operating cost in terms of fuel, we calculate the Employer's NI that we'll pay on the average employee tax bill on top of the car, things like the road fund licence is taken into account, insurance wouldn't be

any differential because we've got one policy that covers all our company cars, all our lorries, and all our hire cars.

Table 9.1 Dillard et al. (2004)'s institutional framework research instrument (Home Retail Group)

Coding category	Sub - category	Identifying tag
<i>Macro factors</i>	Overarching influence of political, economic and social systems <ul style="list-style-type: none"> • Norms, values etc. 	EV(M)
	Institutional isomorphism for legitimacy <ul style="list-style-type: none"> • Marketing and publicity 	MP(M)
<i>Organisational field</i>	None	None
<i>Organisational level</i>	Role of key reflexive organisational participants <ul style="list-style-type: none"> • Transport manager 	KRI(OLTM)
	Change champion	CC(OLTM)
	Management control systems <ul style="list-style-type: none"> • Transport manager 	B(MCS)
	Budgeting	C(MCS)
	Costing	
	Sustainability control systems <ul style="list-style-type: none"> • None 	None

Source: Coding from conducted interviews

Table 9.1 above structures the responses from the interviews and correspondence into the three levels of analysis identified from Dillard et al. (2004)'s institutional framework discussed in Chapter 2.

The overarching influence of economic and social systems and institutional isomorphism for legitimacy at the **macro level** were identified for the involvement of Home Retail Group in social and environmental initiatives. The organisation's involvement in such initiatives is based on what the Transport Manager indicated to the Researcher as the 'basis of doing good business'. There was no evidence however that Home Retail Group has adopted or moving towards the adoption of any social accounting technologies such as those described by Bebbington et al. (2007) and Fraser (2012).

At the **organisational field level**, neither the power of industrial coalitions nor competitive pressure was identified as a driving force for Home Retail Group's engagement with social and environmental initiatives. Also, there was no evidence to suggest that the organisation has adopted, or moving towards the adoption of social accounting technologies for the assessment of such initiatives.

The Transport Manager is both a key reflexive organisational participant and a change champion in the involvement of Home Retail Group in a social and environmental initiative such as electric vehicles. He revealed to the Researcher that:

Out of our population of about thirteen hundred, out of our current stock of company cars, we are incredibly Germanic. We are running at about 60% German cars on the fleet. BMW is exceptionally popular because by everyday car emission standards they are pretty efficient. If we take our high mileage people out of the equation that accounts for roughly for 450 of our 1,300 drivers so it leaves us with effectively 900 drivers for whom the car is a perk and this is the population that I want to look at getting electric cars into.

However, there is no evidence to show that the Transport Manager came up with any innovative social accounting technology for the assessment of the uptake of electric vehicles. He stuck with the established Deloitte model as described earlier.

9.4 Sustainability control systems in Home Retail Group

As can be seen from table 9.1, Home Retail Group has not developed any tools that include environmental and social dimensions as described by Burritt et al. (2002) and Roth (2008). Though the organisation has sustainability credentials such as being part of the Go ON UK consortium as well as being Carbon Trust registered, this does not constitute self-developed sustainability control systems as described by Gond et al. (2012). There are no such sustainability control systems in Home Retail Group for the purposes of strategic planning, budgeting, project management, evaluation and reward etc. Specifically with evaluation and reward, the Transport Manager indicated to the Researcher that sustainability is not an issue considered in performance appraisal.

9.5 Embedding sustainability in organisational strategy in Home Retail Group

Gond et al. (2012) provide different configurations of ideal-types of embedding sustainability in organisational strategy. These configurations are largely dependent on the uses and integration of management control systems.

The World Finance Manager when contacted on management control and sustainability control systems, and how they are deployed for organisational strategy, indicated that:

Sustainability strategy is out my capability and responsibility. It is done mainly at the strategic level in the organisation. I would not be able to help you further with your enquiries

The World Finance Manager further referred the Researcher to the organisation's website for the required information. The website of Home Retail Group does not contain any information on sustainability control systems.

Without any self-developed sustainability control systems, it seems that it would be difficult if not impossible to categorise Home Retail Group into any of the configurations of ideal-types of sustainability provided by Gond et al. (2012). However the organisation has sustainability credentials that largely indicate that sustainability is given a consideration in Home Retail Group. The organisation does sustainability reporting in its annual reports, has an energy committee on which the Transport Manager sits, and also does sustainability training for its staff. The Transport Manager noted that:

[...]We in the car fleet work with the Energy Savings Trust for fuel efficiency driving. I know the lorry fleet does the same thing. I certainly know that our buying department, merchandising department have constant ongoing training to make sure that they source responsibly throughout the world.

The situation in Home Retail Group can be categorised as strategy emergence through sustainability as described by Gond et al. (2012). As can be seen from the situation in Home Retail Group, management control systems and sustainability control systems are not integrated, but the sustainability is mobilised strategically by the top management to deploy a sustainability strategy.

9.6 Embedding sustainability in decision-making in Home Retail Group

From the foregoing in sections 9.2, 9.3 and 9.4, seeking 'better ways' and 'new imaginings' to change the unsustainable organisational behaviours as a result of the deficiencies with mainstream accountings as identified by Fraser (2012), Hopwood et al. (2010) and Bebbington

et al. (2007) is not the case in Home Retail Group. Decision-making in the organisation does not make use of any social accounting technologies, including sustainability accounting modelling.

The sustainability credentials of Home Retail Group indicated in section 9.3 shows an overarching commitment to sustainability. Decision-making is done using what Ittner and Larcker (1998) and Tuomela (2005) describe as traditional accounting based measures. The interviews and contacts with the Transport Manager and the World Finance Manager reveal that Home Retail Group is committed to sustainability at the strategic level. There is no evidence to suggest that decision-making at the operational level takes sustainability into account. Management accountants or officers of the organisation who are tasked with the performance of the accounting function like the World Finance Manager are not directly involved with decision-making regarding sustainability related initiatives.

9.7 Incorporating social and environmental factors into decision-making for the involvement with electric vehicles

The data gathered and coded from the interviews with the Transport Manager and the World Finance Manager indicates no evidence to show that decision-making in Home Retail Group regarding electric vehicles explicitly took into account social and environmental considerations. Not even advantages that could accrue to the organisation for engaging in a social and environment initiative were taken into account. When asked whether issues such as winning and retaining customers, competitive advantage, and attracting, motivating and retaining staff were taken into account in the decision to engage with electric vehicles, the Transport Manager said:

Not really taking that into account. I think that would be more appropriate for companies running electric fleets such as a taxi company. Certainly whenever I go down to London the number of buses and vans that have got, 'This is one hundred per cent electric' written on the side. From our point of view we have to get a lot of the electric cars in for it to be a newsworthy story, and even then it will be a newsworthy story for one day in the press. It would look good in the CSR bit of the website but I don't think it would be a major customer winner for us. We wouldn't do it for the publicity basically.

9.8 Summary and conclusion

The presentation, interpretation and analysis of the data gathered from Home Retail Group indicates that the organisation does not meet the requirements of Gond et al. (2012) for embedding sustainability in organisational strategy. The organisation is strategically committed to sustainability, but there are no specific sustainability control systems.

Conventional accounting which Gray (2011, 2006), Burritt and Schaltegger (2010) and Hopwood et al. (2010) argue neglect corporate sustainability issues, is what pertains in Home

Retail Group. The innovative social accounting technologies described by Bebbington et al. (2007) and Fraser (2012) are not used in Home Retail Group.

At the macro, organisational field and organisational level, there was no evidence to indicate that accounting change as envisaged by Dillard et al. (2004)'s institutional framework occurred.

The following chapter of this thesis is a report on the work of the Energy Savings Trust. The Energy Saving Trust through a nationwide study has conducted operational research with companies to identify commercial niches where electric vehicles could be appropriately deployed. This makes the work of the Energy saving Trust worth examining.

10 The work of the Energy Saving Trust

10.0 Introduction

This chapter, unlike Chapters 5 – 9, is a report on information obtained regarding the work of the Energy Saving Trust to support plug-in vehicles¹⁷. As the research for this thesis was underway contact was made with the Energy Saving Trust who were undertaking work to promote electric vehicles based around a conventional commercial finance model. This chapter draws on their work, published in their *Plugged-in Fleets Initiative: charging forward* (2013) report which was also updated in 2014. Additionally, the Project Liaison Officer of the Plugged-in Fleets Initiative was interviewed. The results in this chapter provide a validation exercise for this research as the Energy Saving Trust through a nationwide study has conducted research with companies to identify commercial niches where electric vehicles could be appropriately deployed. The work of the Energy Saving Trust was conducted in parallel to the Milton Keynes project. This chapter proceeds with relevant background information about the work of the Trust, the business case for the uptake of plug-in vehicles as identified by the Trust and then a summary and conclusion.

10.1 The Energy Saving Trust

The Energy Saving Trust¹⁸ is an independent social enterprise with charitable status that provides businesses, communities and households with impartial advice. The Trust has an innovative range of transport programmes including smarter driving training and customised

¹⁷ Plug-in vehicles include pure electric vehicles (EVs), extended-range electric vehicles (E-REVs) and plug-in hybrid electric vehicles (PHEVs).

¹⁸ See Energy Saving Trust (2013), *Plugged-in Fleets Initiative: charging forward*.

fleet advice. It supports businesses with fleets with their transition to low-carbon, focusing on the reduction in operational costs that can be achieved by reducing emissions. The Trust also performs analysis for both private and public sector fleets on how plug-in vehicles can benefit their businesses.

In partnership with EDF Energy¹⁹ and Route Monkey²⁰ the EST offers a complete package for plug-in vehicle support to organisations participating in the Plugged-in Fleet Initiative.

Underpinning the Plugged-in Fleet Initiative is an understanding of the nature of their cost structure in that plug-in vehicles become more cost effective²¹ when they cover a high mileage and have a longer life cycle²². So, although the Trust itself is aware of sustainability issues, they recognise that businesses are using a commercial model and their advice is structured around a commercial appraisal method. The Energy Saving Trust has built their programme to operate within conventional accounting models which ignore corporate sustainability issues.

The objective of the Plugged-in Fleets Initiative is to demonstrate to those who are interested in engaging with plug-in vehicles where they can work both operationally and financially, and what the benefits to an organisation will be. This according to the Trust is to prevent

¹⁹A producer of low-carbon electricity in the UK (see www.edfenergy.com).

²⁰Provides comprehensive scheduling and routing software solutions for both conventional and electric vehicles (see www.routemonkey.com).

²¹ As established in Chapter 2 the strongest selling point of the electric vehicle is the cost savings users can make through significantly lower fuel costs.

²² The longer life cycle enables more mileage to be covered in total without necessarily covering long distances within a short period which may be impossible because of the perceived range problems of electric vehicles.

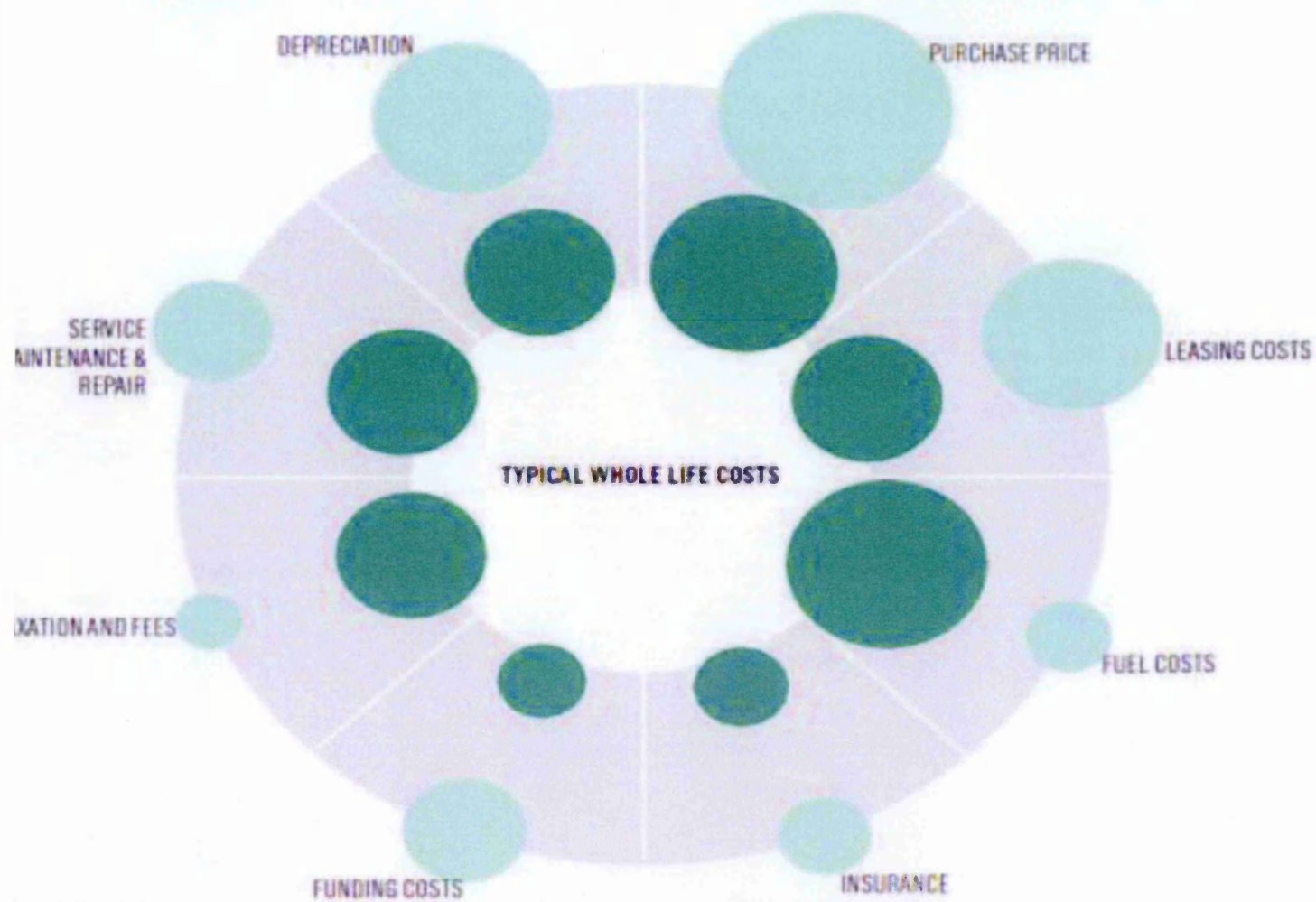
organisations from having a bad experience with electric vehicles after they have bought them and realised that they do not meet their needs.

The Trust invited organisations from across England to apply for participation in the Plugged-in Fleet Initiative. From the applications received, fifteen with fleets operating in London and five additional fleets across the country were selected making a total of twenty fleets. These included organisations such as: Boots, London Fire Brigade, OMM Business Solutions, Surrey County Council and University of Cumbria. The organisations that participated in the Plugged-in Fleets Initiative are not characteristically different from the organisations that have been examined in this study. The Trust has provided each of the fleets with a customised report based on their real life fleet data. The reports contain recommendations on where plug-in vehicles can replace existing vehicles and add value to their business operations. The reports also point out where plug-in vehicles do not work.

10.2 Business case for uptake of electric vehicles by the Energy Saving Trust

According to the report *Plugged-in Fleets Initiative: charging forward* (2013, 2014), whole-life cost analysis is central to making the business case for plug-in vehicles. The business case for the uptake of plug-in vehicles is largely based on Figure 10.3.

Figure 10.3 Business case for the uptake of plug-in vehicles by the Energy Savings



Source: Energy Saving Trust, 2013.

The whole-life cost model in Figure 10.3 above used by the Trust is similar to the Deloitte model described in Chapter 2 of this thesis. The Energy Saving Trust (2014) showed that the Ford Transit Connect T200 (Diesel), Renault Kangoo Z.E ML20 (Electric) and Renault Kangoo Maxi Z.E (Electric) on a lease basis have whole-life pence per mile cost of 34, 30 and 33 respectively. This represents a similar whole-life cost over a five-year period for the typical electric vehicle and its conventional counterpart. This is shown in Table 10.3 below.

Table 10.3: Cost Analysis of Electric Vehicles and their Conventional Counterpart

Make	Ford Transit Connect T200 LWB	Renault Kangoo Z.E ML 20	Renault Kangoo Maxi ZE
Vehicle type	Diesel	Electric	Electric
Term – months	60	60	60
Annual mileage	15,000	15,000	15,000
Diesel pound/litre, Electricity pence per KW hour	1.20	8.42	8.42
Fuel cost - pounds	12,382	1,811	1,811
Lease costs - pounds	13,318	20,819	22,741
Total cost – pounds	25,700	22,630	24,552
Pence per mile based on annual projected mileage	34	30	33

Source: Energy Saving Trust, 2014

The Deloitte model is more of a prescriptive tool, whereas the Trust's model is more of an advisory one. This was revealed to the Researcher when the Project Liaison Officer in interview indicated that:

What you have to do is provide to a Fleet Manager and debate with the Fleet Manager what it is they want to understand and what they want to know and then support them with the evidence to go into their own individual modelling that allows them to come to a decision that says this is right for us. What you have to do is to say: 'I am not trying to tell you, Mr. Fleet Manager, that these figures are right. I am presenting you with some data and explaining it to you and then actually you take it away and work it out with regard to your business and use the figures that we're giving you, go and test them out yourself'.

The Trust's model as shown in Figure 103 takes account of both the situations where organisations purchase plug-in vehicles outright or leases them. In both instances it demonstrates that the whole-life cost of ownership provides significant savings.

Residual/resale values are important in vehicle purchase decisions, but since the Energy Saving Trust model of cost analysis in Table 10.3 is a lease based, it does not feature residual values. The importance of residual value was highlighted in the interview with the Plugged-in Fleets Initiative Project Liaison Officer. He indicated to the Researcher that:

So the simple thing you do is explain to a fleet manager that depending on whether they lease or purchase outright, what they are paying for is, other than paying for purchase price, the running cost of the vehicle like fuel, servicing, and the residual value after the use. If the purchase price is a lot higher for an alternative fuel vehicle, the residual is quite low. So what you are really looking for is the number of miles on the vehicle.

The above statement by the Project Liaison Officer seems to suggest that uncertainty surrounding residual value is taken care of by covering many more miles so to save more by way of fuel cost and make the plug-in vehicle (electric vehicle) add more value to the organisation than its conventional counterpart. This observation is buttressed by the Project Liaison Officer when he indicated to the Researcher that:

It's not to say that we are trying to encourage people to drive excessively or drive long distances but the point is: I have seen policies in place which would actually tend to encourage people to drive more, and for all the good will, that is not what we are aiming to do. What we are actually aiming to do is to optimize vehicles so that they minimize their mileage and do the job that people want them to do. So what you are trying to do is get to a total volume of miles, but if you consider that most people lease vehicles for three or four years, then something adding to sixty/seventy miles typically five days a week could probably balance the books on a four-year lease. So what you could actually consider, I am really trying to balance the books, you could actually go to five years or even six years.

The above statement by the Project Liaison Officer highlights an important issue for electric vehicles. They need an appraisal over a sufficiently long period for the lower running costs to compensate for their higher capital costs. Considerations of a life cycle of more than three years which is typical for the Deloitte model is not practiced by the Trust alone. Home Retail Group which was earlier examined in Chapter 9 uses a four-year life cycle in assessing the total cost of ownership of vehicles. It is noteworthy however that in principle they adopted the Deloitte model of total cost of ownership.

As noted in Chapter 2, the Deloitte model of total cost of ownership does not explicitly show the tax benefits that accrue to individuals (employees) when they use electric vehicles but does cover the tax benefits that accrue to organisations (employers). The Trust, however, not only demonstrates the tax benefits that accrue to organisations (employers) but also explicitly shows the tax benefits that accrue to individuals (employees). The Project Liaison Officer indicated to the Researcher in the interview that:

As you move to other incentives like congestion charge, then that balance starts to change. You just have to look at the tariff incentives and tax as well.

This is particularly emphasised in the *Plugged-in Fleet Initiative: charging forward* (2013) report which indicates and demonstrates that the executive company car plug-in vehicle option is favourable regarding taxation to the employee as well as the employer. The *Plugged-in*

Fleetreport indicates that benefit in kind savings alone are an average of £951²³ per year for the Ampera company car driver compared to the conventional BMW driver.

A significant difference between the Deloitte model of total cost of ownership and the whole-life cost of ownership model used by the Trust is that the model used by the Trust not only clearly takes tax benefits that accrue to both employer and employee into account, but also explicitly takes into account other fiscal incentives such as parking tolls and particularly the London congestion charge in demonstrating the economic viability of the uptake of plug-in vehicles. This may be attributable to the fact that the majority of the organisations that participated in the Plugged-in Fleet Initiative were organisations in the London area. However the report asserts that it had demonstrated there are real opportunities for fleets to adopt plug-in vehicles and reap the cost- and non-cost-benefits.

10.3 Engagement with plug-in vehicles

The *Plugged-in Fleets Initiative: charging forward* (2013, 2014) reports argue that changes in an organisation regarding the uptake of plug-in vehicles are far more likely to happen if the key people in the organisation are bought into the process from the outset. This highlights the role of key individuals and internal sponsors at the organisational level as revealed in the cases of Skyline in Chapter 5, Arup in Chapter 6, Fleetdrive in 8 as well as Home Retail Group in Chapter 9.

The reports claim that they have demonstrated that there are real opportunities for fleets to adopt plug-in vehicles and reap both cost- and non-cost-benefits. Clearly the cost-benefits that will accrue to organisations that take up plug-in vehicles were demonstrated adequately in the

²³ Energy Saving Trust (2013) *Plugged-in fleets initiative: charging forward*, p. 26.

reports and are summarised above. However the non-cost–benefits were largely limited to the reduction in carbon emissions of the organisations. The reports referred to this as the carbon and air quality benefits of plug-in vehicles. The other non-cost–benefits that Bebbington et al. (2007), Fraser (2012) as well as Hopwood et al. (2010) argue need to be taken into account when making a case for social and environmental initiatives such as the uptake of plug-in vehicles are conspicuously missing from the model of the Trust.

The model used by the Trust is fundamentally to make the numbers stack up using a traditional commercial approach. When asked if this was the case, the Project Liaison Officer indicated to the Researcher that:

Absolutely, one of the key issues is changing people's views from thinking electric vehicles as something you put on your fleet to show people how green you are (i.e. a marketing budget issue).

Following on from the statement of the Project Liaison Officer, it appears that the Trust's approach was to counter the perception that electric vehicles are only useful as marketing, but have a proper commercial case. Thus the model of the Trust's Plugged-in Fleet Initiative is encouraging organisations to make decisions based on what Gray (2011, 2006), Burritt and Schaltegger (2010) and Hopwood et al. (2010) refer to as conventional accounting.

Conventional accounting according to them neglects corporate sustainability issues. The innovative sustainability accounting technologies described by Bebbington et al. (2007) and Fraser (2012) are not used by the Energy Saving Trust.

The seeming absence of other business benefits in the Trust's model, like social benefit of jobs, social benefit of product/service as indicated by Bebbington et al. (2007) and Fraser (2012) as well as marketing, image, and staff motivation indicated by Hopwood et al. (2010) led to a further discussion in the interview with the Project Liaison Officer. When asked

whether the model of the Trust takes into account the above mentioned benefits, the Project Liaison Officer indicated that:

Absolutely not, what I wanted to do is to delight them with the financials, then find other things that further delight them like they can park for free or like people walk up to them and pat them on the back and say you are doing a great thing, then that is a real feel-good factor. But I don't need to factor that in. It's strictly according to the numbers.

10.4 Summary and conclusion

The reports *Plugged-in Fleets Initiative: charging forward* (2013, 2014) and the interview with the Project Liaison Officer reveal that, in as much as the Energy Saving Trust is committed to sustainability, the model the Trust has developed to help organisations assess the business case for involving with plug-in vehicles does not explicitly take into account the social and sustainability factors advocated by Bebbington et al. (2007), Fraser (2012) and Hopwood et al. (2010). The model follows the tenets of conventional accounting which Gray (2011, 2006), Burritt and Schaltegger (2010) as well as Hopwood et al. (2010) argue neglect corporate sustainability issues in decision-making.

Notably the model developed by the Trust on whole-life cost is similar to the Deloitte model of total cost of ownership. They, however, differ in that, while the Trust's model is advisory in nature, the Deloitte model is much more prescriptive. The Trust's model also tends to take into account tariff incentives and tax incentives that are peculiar to plug-in vehicles, which the sustainability accounting modelling described by Bebbington et al. (2007) and Fraser (2012) does take into account, while the Deloitte model does not do so.

The next chapter of the thesis is a presentation of the findings and discussions of the study. It brings out the major findings that were made from the various organisations that were studied.

11 Findings and discussions

11.0 Introduction

This chapter is a presentation and discussion of the main findings from each of the organisations that were examined in this study. These are namely: Skyline Taxis, Arup, Milton Keynes Council, Fleetdrive and Home Retail Group. This is structured around the institutional theory provided by Dillard et al. (2004) and discussed in Chapter 3 of this thesis. In particular, the analysis uses the macro factors, organisational field factors and the intra-organisational imperatives that the institutional framework provided by Dillard et al. (2004) identifies.

Sustainability accounting modelling which Bebbington et al. (2007) and Fraser (2012) advocate as an appropriate social accounting technology for the assessment of social and environmental initiatives also informs the discussions, as do the configuration of ideal-types of sustainability presented by Gond et al. (2012). The findings from the various organisations are also examined with respect to the work done by the Energy Saving Trust discussed in Chapter 10. This is to determine the extent to which these organisations' assessments of their engagement with electric vehicles are similar or otherwise to the model used by the Trust.

The organisations covered in this study reveal a range of situations and motivations for engaging with electric vehicles. The engagement of Skyline with electric vehicles is for internal use by the company itself, but this is affected by the ownership structure of the cab company. Arup is promoting electric vehicles particularly to develop capability for an emerging customer need. The Milton Keynes Council on its part is promoting electric vehicles from a public sector perspective. Fleetdrive is promoting electric vehicles as a new commercial sector for their operations and Home Retail Group for internal use by staff. The

Energy Saving Trust is tasked with the role to make the business case for the commercial use of electric vehicles.

This chapter proceeds with a summary of the findings from the various organisations that were examined in this study. The chapter also has a section on reflections on the Milton Keynes Electric Light Vehicle InfraStructure 'ELVIS' project. It ends with a summary and conclusion.

11.1 Findings and discussions (Skyline Taxis)

An interpretation and analysis of the data gathered from Skyline Taxis indicates that Skyline has management control systems. However, the business does not have any self-developed sustainability control systems as described by Gond et al. (2012). This means that management control systems and sustainability control systems cannot be integrated as described by Gond et al. (2012) to embed sustainability in organisational strategy. Though Skyline has sustainability credentials such being ISO 14001 certified and usage of solar and LED lightning, this does not constitute sustainability being embedded in organisational strategy as described by Gond et al. (2012). As indicated in Chapter 5, the situation in Skyline represents a compliance driven sustainability strategy. This configuration is one of the four configurations that Gond et al. (2012) indicates constitutes low integration of sustainability and management controls.

Organisational level, organisational field level and the macro level factors have not resulted in accounting change a result of Skyline engaging with social and environmental initiative(s). Decision-making in Skyline is guided by conventional accounting. Innovative social accounting technologies such as those described by Bebbington et al. (2007) and Fraser (2012) are not utilised in Skyline. The model used by Skyline to provide advice for their drivers for the uptake of electric vehicles followed similar conventional accounting tenets as the whole-

life cost of ownership model used by the Energy Saving Trust. It is noteworthy however that the engagement of Skyline with electric vehicles, though as a result of the influence other factors at the macro, organisational field and organisational levels as indicated in Chapter 5, was particularly due to the role of a key organisational participant and change champion.

11.2 Findings and discussions (Arup)

The analysis of the data gathered from Arup reveal that though Arup does not have self-developed sustainability control systems such as those described by Gond et al. (2012), Arup is committed through its activities and ISO 14001 certification to sustainability. The non-existence of self-developed sustainability control systems suggests that they cannot be integrated with management control systems.

However, decision-making in Arup, as indicated in Chapter 6, is undertaken with the Arup Management System that takes into account social and environmental considerations.

Decision-making in Arup is not undertaken using conventional accounting tools which Gray (2011, 2006), Burritt and Schaltegger (2010) and Hopwood et al. (2010) argue neglect corporate sustainability issues. As indicated in Chapter 6, Arup has a sustainability driven strategy. This is one of the configurations that Gond et al. (2012) describe as having a high integration of sustainability and management control systems.

Though there was no accounting change emanating from the macro, organisational field and organisational levels as a result of engaging with a social and environmental initiative, the engagement with electric vehicles was as a result of the role of a key reflexive organisational participant and change champion at the organisational level as was the case in Skyline.

11.3 Findings and discussions (Milton Keynes Council)

As indicated in Chapter 7, the Milton Keynes Council has no self-developed sustainability control systems as described by Gond et al. (2012) though the organisation has an overarching theme of sustainability at the strategic level. There are no practical measures to embed sustainability in the activities of the Council. The Council has management control systems that guide decision-making in the organisation. However there was no evidence to show that these systems have environmental and social components. The management control systems are typically of the kind Gray (2011, 2006), Burritt and Schaltegger (2010) and Hopwood et al. indicate neglect corporate sustainability issues. The situation in the Council as stated in Chapter 7 is that of strategy emergence through sustainability as described by Gond et al. (2012). Such a situation is one of the four configurations that Gond et al. (2012) describe as having low integration of sustainability and management control systems.

Innovative sustainability accounting technologies such as sustainability accounting modelling described by Bebbington et al. (2007) and Fraser (2012) are neither adopted nor considered to be adopted by the Council. Even with the engagement with electric vehicles, the Council did not utilise any such sustainability accounting technologies.

At the macro, organisational field and organisational there has not been any accounting change as a result of the influence of any factors at those levels. It is noteworthy however that the engagement with electric vehicles was particularly influenced by the central government's effort to electrify the road transport.

11.4 Findings and discussions (Fleetdrive)

The ethos of doing business in Fleetdrive cannot be said to be socially and environmentally centred. Just as in the commercial businesses discussed earlier, i.e. Skyline and Arup, Fleetdrive does not have self-developed sustainability control systems. However, unlike Skyline and Arup, Fleetdrive has no sustainability credentials such as being ISO 14001 certified. The organisation has management control systems as indicated in Chapter 8 that neglect corporate sustainability issues in decision-making as indicated by Gray (2011, 2006), Burritt and Schaltegger (2010), and Hopwood et al. (2010).

The absence of self-developed sustainability control systems as well as any sustainability credentials makes it difficult, if not impossible to categorise Fleetdrive into one of the configurations of ideal-types of sustainability described by Gond et al. (2012). However, the situation in Fleetdrive can be seen to be one of no integration of sustainability and management control systems.

Even with the engagement with electric vehicles, Fleetdrive does not use any social accounting technologies such as those described by Bebbington et al. (2007) and Fraser (2012). Decision-making is based on what Ittner and Larcker (1998) and Tuomela (2005) refer to as traditional accounting-based measures. Macro, organisational field and organisational level factors had no influence on any accounting change. However the Managing Director is a key individual as well as change champion in Fleetdrive for the engagement with electric vehicles. This re-emphasises the important role of key people in the organisation at the strategic level to promote social and environmental initiatives as was seen in the case of Skyline and Arup as well.

11.5 Findings and discussions (Home Retail Group)

As indicated in Chapter 9, the situation in Home Retail Group is in accordance with the configurations of Gond et al. (2012) of strategy emergence through sustainability. This is because Home Retail Group just like Skyline, Arup and Fleetdrive has no self-developed sustainability control systems. However, unlike Fleetdrive but similar to Skyline and Arup, Home Retail Group has sustainability credentials that shows a strategic commitment to sustainability.

The strategic commitment to sustainability however does not translate to the adoption of sustainability accounting technologies such as sustainability accounting modelling.

Conventional accounting dominates decision-making in the organisation. Regarding the engagement with electric vehicles, the Deloitte model that Arup is using to demonstrate the advantages that come with taking up electric vehicles, fundamentally neglects corporate sustainability issues as indicated by Gray (2011, 2006), Burritt and Schaltegger (2010) and Hopwood et al. (2010).

Macro and organisational level factors influenced the engagement of Home Retail Group with electric vehicles but this did not result in the adoption of any social accounting technology.

The need for an influential person in the organisation as well as change champion to promote engagement with social and environmental initiatives such as electric vehicles was reinforced in the case of Home Retail Group

11.6 Similarities and differences of the participating organisations regarding their engagement with electric vehicles

An examination of the findings from the participating organisations presented in Chapters 5 – 9 and summarised in this chapter reveals the similarities and differences presented in table 11.1 below;

Table 11.1 Similarities and differences of participating organisations regarding their engagement with electric vehicles

Organisations	Skyline Taxis	Arup	Milton Keynes Council	Fleetdrive	Home Retail Group
<i>Motivation</i>	Business development	Business development	Social responsibility	Business development	Social responsibility
<i>Intention</i>	Increase market share	Learning opportunity	Reduction in carbon emissions	Create a niche market	Enhance company car choice
<i>Internal Champion</i>	Marketing Manager	Group Board Member	Organisational decision	Managing Director	Transport Manager
<i>Benefits/risks</i>	Improve profitability	Future increase in business/ sunk costs	Improved environmental performance	Improve profitability	Improve public image
<i>Importance of financial consideration</i>	Very important	Important	Important	Very important	Very important

The motivation for Skyline Taxis, Arup and Fleetdrive engaging with electric vehicles is for the purpose of business development. This is not surprising particularly for Skyline Taxis and Fleetdrive, since they are commercially oriented businesses. What is surprising is the motivation for Arup's engagement with electric vehicles. Arup is a business that operates with an ethos of doing social good. Hence it would have been expected that their engagement with electric vehicles would have been motivated by social responsibility. However it was motivated by business development just as a typical commercially oriented organisation such as Skyline Taxis. Unsurprisingly, the Milton Keynes Council being a public service organisation's motivation for engagement with electric vehicles was social responsibility. However, surprisingly Home Retail Group with its high importance attached to financial consideration in engaging with electric vehicles, was motivated to engage with electric vehicles because of social responsibility.

In as much as Skyline Taxis, Arup and Fleetdrive have a common motivation for engaging with electric vehicles as indicated above, their intentions for the engaging with electric vehicles differ. Skyline Taxis' intention is to increase its market share; Arup's is a learning opportunity for its employees in preparation for an anticipated uptake of electric vehicles by organisations and individuals in the near future, whereas that of Fleetdrive is to immediately create a niche market segment for electric vehicles in its business. Similarly, though the Milton Keynes Council and Home Retail Group have a common motivation for engaging with electric vehicles, their intentions for doing so differ. The Council has the intention of reducing carbon emissions through its engagement with electric vehicles whiles Home Retail Group's intention is to enhance company car choice.

Apart from the Milton Keynes Council which did not have any particular individual within the organisation who championed the organisation's engagement with electric vehicles, all the other organisations had an internal champion for their engagement with electric vehicles. The decision to engage with electric vehicles was an organisational decision having realised the UK government's desire to electrify the road transport system. However, there were individuals within the other participating organisations who championed the organisations' engagement with electric vehicles. These individual champions were typically in the top echelon of the organisational structure. However, they were different for each organisation. The Marketing Manager was the one who championed Skyline Taxis' engagement with electric vehicles whilst a Group Board Member of Arup championed its engagement with electric vehicles. The engagement of Fleetdrive with electric vehicles was championed by the Managing Director while the Transport Manager of Home Retail Group championed their engagement with electric vehicles. It is noteworthy that in organisations examined in this study, no individual particularly from the accounting or finance function was a champion of the organisations' engagement with electric vehicles. This suggests a non-involvement of the accounting and finance function with social and environmental initiatives such as an engagement with electric vehicles.

For the typical commercially oriented organisations (Skyline Taxis and Fleetdrive) that were examined in this study, improved profitability was the benefit that would accrue to them for their engagement with electric vehicles. An enhancement of the public image of Home Retail Group was the benefit that the organisation seeks to gain through its engagement with electric vehicles. For the Milton Keynes Council, an improvement in the environmental performance through a reduction in the carbon emissions of the organisations in the Milton Keynes area is the benefit that would accrue to the Council. Arup had a benefit of potential future increase in

business through the acquisition of new clients as well as a risk of sunk cost since it was trialling its involvement with electric vehicles and this could go wrong.

For all the organisations examined in this study, predictably for the typically commercially oriented organisations (Skyline Taxis, Fleetdrive and Home Retail Group), financial considerations were very important in their engagement with electric vehicles. Financial consideration was just as important in Arup which has an ethos of doing social good as it was in the Milton Keynes Council which is a public service organisation. It is widely perceived that an engagement with a social and environmental initiative such as electric vehicles usually does not have financial consideration at its core. However, this study indicates that financial consideration is at least important with such an engagement, although at a strategic development level rather than an immediate financial return.

In as much as all the organisations examined in the study engaged with electric vehicles for various reasons or motivations, none of them could be deemed to be applying sustainability assessment modelling nor classified into one of the ideal type configurations of sustainability integration. Firstly the strict requirements of the application of sustainability assessment modelling as described by Bebbington et al. (2007) and presented by in Chapter Two makes it impossible to indicate that any of the participating organisations has adopted sustainability assessment modelling in assessing social and environmental initiatives such as an engagement with electric vehicles. Almost all the organisations, particularly Arup considered social and environmental issues in deciding to engage with electric vehicles. However, even Arup cannot be described as having adopted sustainability assessment modelling in its strict sense. As the participating organisations move up to adopt sustainability assessment modelling, it is likely that their propensity to adopt electric vehicles would also increase. Secondly, the strict

definition of what constitute sustainability control systems provided by Gond et al. (2012) and presented in Chapter Two makes it impossible to classify any of the organisations into the ideal type configurations of sustainability integration. However all of the organisations examined possess sustainability credentials, particularly ISO certification which indicates that they are on a path to sustainability integration.

11.7 Reflections on the Milton Keynes Electric Light Vehicle Infrastructure Project

The project began in 2010 came to an end at the end of March 2013. This was part of the Plugged-in Places programme, part of the wider Milton Keynes low-carbon living programme towards energy and environmental challenges. It was aimed at supporting the widespread uptake of electric cars and vans with a target of 1,000 electric cars on Milton Keynes' roads by 2014. From January 2010 to December 2013, a total of 153 plugged-in vehicles were registered in Milton Keynes²⁴. This represents just 15.3% of the targeted number of electric vehicles. The situation nationwide is not particular different. In the UK as a whole, as of December 2014, out of the 166,198 new cars registered in that month, those that were eligible for the Plugged-in car grant were 2,141. Though an improvement on the December 2013 figures which indicated that out of the 152,918 newly registered cars, 297 were eligible for the Plugged-in car grant, (SMMT, 2015), these statistics suggests that the Milton Keynes project was not a success.

However the project provided a legacy of three further projects that has helped establish Milton Keynes as an incubator for emergent electric vehicle initiatives. First is the establishment of the Wolverton e-car club. This is a pay-per-hour car club with a fleet of zero-

²⁴<http://pim.cenex.co.uk/plugged-in-midlands/electric-car-registration-statistics> (accessed 16 March 2015)

emission electric vehicles. It was started in 2011 and launched full-scale in 2012 with a fleet of three Nissan Leaf cars. The e-car club was funded by a combination of private venture capital and a grant from the Technology Strategy Board.

The second was the electrification of the route 7 bus service in Milton Keynes. This was a result of five-year collaboration between eight organisations led by a subsidiary of Mitsui and Co, (Miles and Potter, 2014). An active participant in this initiative is Arup, one of the organisations that have been studied in this thesis. Their engagement with this initiative has been described in Chapter 6 of this thesis. The buses have been running successfully since January 2014 and the ultimate objective of Arup is to use the data collected from the trial to demonstrate the economic viability of low-carbon public transport.

The last but not the least is the autonomous transport demonstrator for low-carbon urban transport zone (LUTZ). This is a fifty million pound, five-year programme for the deployment of small, driverless electric cars expected to carry two passengers and baggage and operate at a speed of 12mph. According to the Transport Strategy Board, the programme was particularly designed for learning to contribute to an 'innovation ecosystem' in which city-based alliances of communities, businesses and universities collaborate to devise new services and applications.

11.8 Summary and conclusion

These findings and discussions have revealed a number of key issues. Firstly, the possibility of an organisation being strategically committed to sustainability but not having any self-developed sustainability control systems was observed. This goes to a large extent to support the observation of Gond et al. (2012) that organisations have embraced the sustainability rhetoric in their discourse, but little is known about the processes whereby management

control systems contribute to a deeper integration of sustainability. The evidence found in this research suggests there is little, if any, deeper integration.

Secondly, decision-making in the organisations in this study does not utilise any sustainability accounting technology, particularly sustainability accounting modelling described by Bebbington et al. (2007) and Fraser (2012). The organisations could be committed to sustainability in pursuance of being good corporate citizens, However, decision-making involving social and accounting initiatives still follow conventional accounting that Gray (2011, 2006), Burritt and Schaltegger (2010) and Hopwood et al. (2010) argue neglect corporate sustainability issues.

Thirdly, some macro, organisational field and organisational factors were observed to have influenced the engagement of the organisations, but these influences did not result in any accounting change. Influence at the organisational level of a key organisational participant or change champion was particularly observed to be important for the organisations' engagement with electric vehicles.

Last but not the least, although the Milton Keynes Electric Light Vehicle InfraStructure Project seemed to have failed to deliver the number of electric vehicles it promised, the project provided learning opportunities which organisations such as Arup and Fleetdrive indicated a major reason why they engaged with electric vehicles.

The next chapter is a summary and conclusion of the whole thesis. The chapter seeks to provide answers to the research questions that were outlined in Chapter 2 of this thesis, provide suggestions as to how policy could be crafted to encourage the uptake of innovative social and environmental products such as electric vehicles, demonstrate the academic

contribution this thesis has made and also show areas for future research emanating from this research.

12 Summary and conclusion

12.0 Introduction

This chapter is a summary and conclusion of the entire thesis. Based on the data collected and the analysis and interpretation, this chapter proceeds by providing answers to the research questions outlined in section 2.8. of Chapter 2, provides suggestions as to how policy actions could enhance the uptake of innovative social and environmental technologies such as electric vehicles, indicates the academic contribution that this study has made, provides future research directions based on this study, provides lessons for both industry and policy and also indicates the potential publications from this thesis.

12.1 Research questions

As indicated in Chapter 2 (2.8. Research questions), this study set out to address this question:

How do the participating organisations in this study assess sustainable development initiatives, particularly regarding electric vehicles?

In addressing the above issue, the following sub-questions will also be addressed:

- I. To what extent is sustainability embedded in the strategy of participating organisations that are engaging with electric vehicles in accordance with the configurations of Gond et al. (2012)?
- II. Is sustainability assessment modelling applied by the participating organisations for their engagement with electric vehicles as indicated by Bebbington et al. (2007) and Fraser (2012)?

- III. In the event that sustainability assessment modelling is not applied by the participating organisations, what techniques are used? What social and environmental costs/benefits are considered?
- IV. How are these social and environmental costs/benefits measured?

12.2 Is sustainability embedded in the strategy of participating organisations?

From the data gathered from the organisations examined for this study and the interpretation and analysis, it is evident that sustainability is not embedded in their strategy according to the configuration of ideal-types of configuration provided by Gond et al (2012). As discussed in Chapter 11, all the organisations covered in this study fell into Gond's configurations of low integration of sustainability. All the organisations did not have self-developed sustainability control systems as described by Roth et al. (2008) and Gond et al. (2012). With the exception of Fleetdrive, the other organisations can largely be considered as good corporate sustainability citizens. This is because, as shown in Chapter 11, they have sustainability credentials. The organisation that has the highest sustainability credentials was Arup with Fleetdrive having the least sustainability credentials. These credentials in themselves however do not necessarily constitute an integration of sustainability into strategy.

Sustainability in the organisations examined is an overarching theme that is not translated to the systems and processes of the organisation. This corroborates the observation of Gond et al. (2012) that organisations have embraced the sustainability rhetoric but a deeper integration of sustainability within organisational strategy is still not the case.

12.3 Is sustainability assessment modelling as described by Bebbington et al. (2007) and Fraser (2012) applied by the participating organisations in assessing their engagement with electric vehicles?

None of the organisations examined in this study applied sustainability assessment modelling as described by Bebbington et al. (2007) and Fraser (2012) in assessing their engagement with electric vehicles. There was no evidence to suggest that they use this assessment model in any other situation. One of the organisations (Arup) had the semblance of sustainability assessment modelling being used in the organisation. This is because the assessment of the model used in the organisation as indicated in Chapter 6 and 11 (section 11.2) exhibited some attributes of sustainability assessment modelling as described by Bebbington et al. (2007).

Some macro level and organisational level factors accounted for the participating organisations in engaging with electric vehicles as indicated in Chapter 11 of this thesis. The role of key organisational individuals and change champions at the organisational level as described by Dillard et al. (2004) was particularly key to the organisations' engaging with electric vehicles. However, there was no evidence to suggest that this resulted in any shift towards the adoption of any social accounting technology. There was no institutional isomorphism towards sustainability assessment modelling observed in any of the organisations examined. The change champions and key organisational individuals were observed to be high ranking officials of the organisations: the Managing Director of Fleetdrive, the Group Board Member of Arup and the Director of Skyline.

12.4 What assessment techniques are used? What social and environmental factors are considered?

The organisations in this study (except Arup) in their assessment of their engagement with electric vehicles and other initiatives/projects use methods that Ittner and Larcker (1998) describe as traditional accounting based measures. The methods are financially/economically oriented. They do not possess financial and non-financial measures as described by Tuomela (2005) and Franco-Santos et al. (2012). The assessment is done with methods that according to Burritt and Schaltegger (2010), Hopwood et al. (2010) and Gray (2011) neglect corporate sustainability issues.

So, overall, the organisations in the study take a broadly commercial approach to engaging with electric vehicles, and do not seek to embed sustainability in the process. The methods used by the organisations are not characteristically different from both the Deloitte model described in Chapter 2 and the model used by the Energy Saving Trust described in Chapter 11.

The results of this study seem to suggest that organisations have not come to the point where sustainability is in practice incorporated in decision-making though they may be committed to the ideals of sustainability in principle. Given the recent attention to social and environmental issues, the organisations are missing some important aspects of the decision-making process due to the narrowness of the methods being used. Sustainability assessment modelling as described by Bebbington et al. (2007) and Fraser (2012) addresses these missing issues in the assessment of sustainable development initiatives.

12.5 How are the social, environmental and other factors measured?

From the data collected and analysed, social, environmental and other factors are not explicitly taken into account in the assessment of the engagement with electric vehicles. In making a case for electric vehicles, the organisations examined in this study recognised some of the issues Bebbington et al. (2007) and Hopwood et al. (2010) indicate should be taken into account when assessing a sustainable development initiative. It is noteworthy, however, that these were qualitatively assessed and values were not put on them. They were not central to the assessment of the engagement with electric vehicles and perceived mainly as benefits that could accrue after the engagement with electric vehicles. The benefits that were largely taken into account by the organisations are what Hopwood et al. (2010) categorises as:

- *winning and retaining customer*
- *competitive advantage, innovation and new products*
- *reputation and brand.*

12.6 Lessons for industry

A disjuncture between high level rhetorical commitment to sustainability and what actually happens regarding decision-making at the operational or tactical level has been observed in this study. This seems to suggest that organisations are either:

- just paying lip service to the issue of sustainability while in practice they may not be necessarily committed to incorporating sustainability issues into organisational decision-making;
- are at a transitional stage where there is a broad high-level commitment, but this is yet to be reflected at the tactical levels of the organisation, or

- Currently finding it unnecessary to incorporate sustainability issues into organisational processes and procedures.

An important area to actually entrench or facilitate decision-making regarding sustainability initiatives is to streamline existing decision-making systems with sustainability assessment modelling as described by Bebbington et al. (2007). When this is done, the current situation observed with the organisations in this study which seems to be pointing in the direction of a corporate social responsibility focus will shift to a more engaging focus and give it a polyvocal attribute that involves all internal stakeholders in the organisations.

Perhaps a good starting point towards sustainability in organisations could be rather than trying to value and incorporate sustainability issues into processes and procedures, adjustments to the predominantly commercial existing systems to allow for the nature of sustainable development initiatives might be more appropriate.

12.7 Lessons for policy initiatives

Compared with individual consumers, organisations have the financial resources to take up innovative social and environmental technologies such as electric vehicles. Existing sales data has also shown that corporate/organisational purchases of automobiles outstrip that of the purchases of individuals and households. The targeting of fiscal incentives at corporations and other organisations that have the financial capability to take up these innovative technologies should be encouraged if the aim of policy is to ensure their widespread uptake. When these organisations are incentivised to take up these innovative technologies and they become a significant part of the vehicle stock, it will demonstrate to individuals and households that

these innovative technologies are practical and thereby reduce or eliminate any apprehension of individuals to also take them up.

The model used by the Energy Saving Trust to demonstrate to organisations the feasibility of the uptake of electric vehicles described in Chapter 10 seems to work on well with organisations. This is probably because organisations examined in this study tend to use commercial decision-making tools that are characteristically similar to the Energy Saving Trust's model and hence are convinced by it. Even though this model is purely a commercial model, such an initiative can be much more supported by policy as a starting point for organisations to engage with sustainability development initiatives such as electric vehicles. Through such an approach, organisations that are exposed to such sustainable development initiatives could then also be introduced to more appropriate sustainability accounting technologies such as sustainability assessment modelling.

Without a greater understanding of how sustainable developments initiatives such as an engagement with electric vehicles are treated, there is a real danger that electric vehicles will remain a tiny isolated niche market that has no impact on mainstream fleet purchase and use as the number of vehicles actually taken up in the period of the Milton Keynes Electric Vehicle Project indicated in Chapter 11, (section 11.6) suggests.

12.8 Academic contribution of this study

There is limited research on the subject of how organisations incorporate social and environmental considerations into decision-making. This study provides the basis on which this otherwise unexplored area of academic enterprise can proceed. Specifically with regards to research involving electric vehicles, this study is the first to provide rich information on

electric vehicles and how they are assessed within organisations. This information has not been previously available in the academic literature.

The usage of Dillard et al.'s (2004) institutional framework for this study revealed that there may be changes in an organisation's engagement with sustainable development initiatives, but this would not necessarily result in a change in how such an engagement is assessed.

A further contribution of this study is that it identifies a critical need for research into how organisations can be incentivised to adopt innovative social accounting technologies such as sustainability assessment modelling.

As noted in chapter 11, this study has shown that the strict application of sustainability assessment modelling as described by Bebbington et al. (2007) makes it difficult if not impossible for organisations to apply the model in its strict sense. As can be seen from this study, organisations may be taking into account social and environmental considerations in their assessment of social and environmental initiatives but this may not be considered as sustainability assessment modelling. A more relaxed version of sustainability assessment modelling has the potential to encourage many organisations to take into social and environmental issues in decision making. Additionally, the rigid definition of what constitutes sustainability control systems also makes it difficult if not impossible to determine whether an organisation has sustainability integrated in its strategy. A more flexible definition of sustainability control systems would allow for an acknowledgement of the sustainability credentials such as ISO certification of organisations and hence their classification.

The study has shown that there need to be a spectrum of classification of adoption of sustainability assessment modelling. This would allow for a degree of 'fuzziness' in the classification as opposed to a strict classification regime of adopter or non-adopter.

12.9 Limitation of the study

The approach by this study has the potential to impact the generic application of the study. It is noteworthy that the objective of this study is not to generalise the findings, but to identify key factors involved. However, the findings could have been much more representative and enriched if a larger number of organisations were examined. This limitation was largely a result of the number of organisations that engaged in the Milton Keynes 'ELVIS' project and were thus available to this research.

12.10 Directions for future research

This study has brought new insights into how organisations incorporate social and environmental considerations into decision-making. The study has identified certain key issues that were not the original focus of the research, but which the researcher intends to pursue further in the near future.

Gond et al. (2012) provide configurations of ideal-types of integrating sustainability in organisational strategy. These configurations were considered to determine the extent to which sustainability is integrated into the strategy of the organisations that were examined for this study. Future research must be directed at the relative importance of each of these configurations in decision-making in an organisation.

Bebbington et al. (2007) indicate that sustainability assessment modelling is an appropriate social accounting technology for assessing sustainable development initiatives. Future research could be directed towards the relative importance of the various components of sustainability assessment modelling and attempts should be made at quantifying these components for decision-making.

The framework provided by Bebbington et al. (2007) seems to be very appropriate for organisations that are engaging with sustainable development initiatives (electric vehicles) as end-users. The framework is not necessarily tailored to the requirements of organisations acting as intermediaries to make such initiatives available and affordable to other organisations. This research suggests that there may be different pathways and motivations to engagement in sustainability issues which could lead to variations in assessment systems. Future research could be directed towards making the framework suggested by Bebbington et al. (2007) appropriate for the use of organisations who act as intermediaries and not end-users per se, and for other organisational situations.

The rigidity of the definition of sustainability control systems provided by Gond et al. (2012) and indicated in Chapter 2 (section 2.5) makes it difficult if not impossible to classify organisations that have sustainability credentials e.g. ISO certification, into one of the ideal type configurations of sustainability strategies described by Gond et al. (2012). A more flexible or ‘fuzzy’ definition of sustainability would allow for relevant sustainability credentials to be considered in determining the sustainability strategies adopted by organisations given the amorphous nature of sustainability.

12.11 Potential publications from the study

A number of conference presentations have already been made based upon the work in this thesis. These are detailed in Appendix E. The study has provided findings in the various chapters of the thesis that can be published in journals and made available to the academic and practitioner communities. The study examined various organisations both in the public and private sector. These organisations were varied in their size and sophistication and also had

varying degrees of commitment to sustainability. Potential publications that can come out of this thesis are listed below:

1. Business case analysis for engagement with a sustainable development initiative (electric vehicles) in an organisation with an ethos of doing social good: the case of Arup.
2. A comparative analysis of the business case for engagement with a sustainable development initiative (electric vehicles) in an organisation that has high sustainability credentials and an organisation that has no sustainability credentials: the cases of Arup and Fleetdrive.
3. Assessment of the engagement of a public service organisation with a sustainable development initiative (electric vehicles): the case of Milton Keynes Council.
4. Do large corporations with strong sustainability credentials incorporate social and environmental considerations into decisions to undertake sustainable development initiatives (electric vehicles)? The case of Home Retail Group.

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Appendix A Research study information sheet

You are being invited to take part in a research study. Before you decide whether to take part, here is some information about it.

Project title

Milton Keynes Electric Vehicles Project

Researchers

Dr Claudia Simoes/Dr Anne Smith Tel 01908 655669 anne.smith@open.ac.uk

Professor Stephen Potter Tel 01908 652634 s.potter@open.ac.uk

Dr Martin Upton Tel 01908 655810 m.upton@open.ac.uk

Professor Sally Dibb Tel 01908 652787 s.dibb@open.ac.uk

Mr. Abukari Atchulo 01908 654660 a.s.atchulo@open.ac.uk

The Open University Business School

The Open University

Milton Keynes

MK7 6AA

United Kingdom

About this study

This study is part of The Open University's contribution to Milton Keynes Electric Vehicle project. This part of our research seeks to develop an understanding of organisations exploring

the use of low-carbon vehicles, and in particular the actual or potential use of electric vehicles. We are linking our research to activities to support organisations and want to develop an ongoing dialogue that helps us and Milton Keynes Council provide you with effective support.

This interview is to explore what has motivated your interest in electric/low-carbon vehicles and what have been the influences upon you, the issues that have arisen, challenges faced and opportunities presented in your business.

We will not be seeking any commercial data at this interview.

If you have questions you want answered or a complaint to make you could talk to the principal investigator, **Prof Stephen Potter** at The Open University and his direct line is **01908 652634**.

Do I have to take part?

Taking part in research is voluntary. If you do decide to take part, you will be given this information sheet to keep and be asked to sign a consent form. You are still free to withdraw at any time by simply saying so and without giving a reason. You are free to refuse to answer questions.

Confidentiality

Taking part in a research study involves giving information to the researcher, which may be: answers you give to questions about your work, your role or your perception of the organisation. You have the right to expect that your personal details will be kept secure and confidential but also neither you nor your organisation will be identifiable in any reports or articles produced.

You will be asked to sign a consent form that should include the study title, my name, Stephen Potter, as principal researcher and details of how to make a complaint if necessary. You should have a copy of the form with you to keep.

At the end of the study

The results of the study will be used to write an account to this organisation of the findings.

Combined results from a number of organisations will be used to write a broader account.

Some of the results may be used for case studies, teaching and academic papers.

The main outputs from the research will comprise academic journal articles, conference papers, and PhD thesis.

Appendix B Consent form – Electric Vehicle Project interviews

Project title: Milton Keynes Electric Vehicle Project
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Agreement to participate

I, <table border="1" data-bbox="196 533 819 674"></table>	(print name)
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Agree to be interviewed as part of this research project.

I have had the purposes of the research project explained to me.

I have been informed that I may refuse to participate at any point by simply saying so.

Participation is voluntary and I am free to withdraw from the research any time. I am free to refuse to answer questions.

I have been assured that my confidentiality and that of my organisation will be protected.

Neither I nor my organisation will be identified in any outputs of this research.

I agree that the information that I provide can be used for educational or research purposes, including publication.

The interview will be audio-recorded. However, I have the option to decline the recording. I can request destruction of the recording up to two weeks after it is made.

I understand that if I have any concerns or difficulties I can contact **Prof Stephen Potter** at 01908 652634. If I wish to complain about any aspect of my participation

in this project, I can contact **Dr Anne Smith/Dr Claudia Simoes**, who is the Director of Research Programmes at the Business School and her direct line is: **01908 655669**.

I assign the copyright for my contribution to the researcher for use in education, research and publication (e.g. an unattributed quote for illustrative purposes).

Signed:

 Date:

Appendix C Questions guiding interviews

Section A

Describe the management control systems/performance measurement systems you have in your organisation

What are the systems described above intended to achieve in your organisations?

Have there been any changes or modifications to these systems?

What type of sustainability control systems do you have in your organisation?

What are the systems described above intended to achieve in the organisation?

How would you say management control systems and sustainability control systems relate in your organisation?

What is the attitude of the board and senior management towards sustainability?

What are the sustainability drivers of the organisation? Are they clearly understood and analysed?

Are the key sustainability drivers of the organisation incorporated into the organisation's strategy?

Is sustainability the responsibility of a particular department or is it the responsibility of the whole organisation?

Are there sustainability targets and objectives that are meaningful to individual subsidiaries, divisions and departments?

Are there processes in place that allow sustainability issues to be taken into account clearly and consistently on a daily basis?

Are there adequate training programmes on sustainability?

Are sustainability targets and objectives included in performance appraisal?

Are there particular people in the organisation who promote sustainability and celebrate success?

Is sustainability performance monitored and reported?

Section B

In making the decision to engage with electric vehicles and other initiative with a considerable social and environmental content, how did you determine the economic benefits that would accrue to your organisation?

How did you assess the values of the resources used?

How did you assess the environmental impact as a result of engaging with an initiative with considerable social and environmental content?

How did you assess the impact on society as whole?

Which of these issues does your organisation consider when making decisions on initiatives with a considerable social and environmental content (such as electric vehicles in particular) and how do you measure them:

- winning and retaining customers?

- competitive advantage, innovation and new products?
- attracting, motivating and retaining staff?
- managing risk?
- driving operational efficiencies and cost reduction?
- maintaining licence to operate?
- accessing capital?
- reputation and brand?

Do you have any other issues you took into account particularly regarding the engagement with electric vehicles that you would want me to know?

Appendix D List of identifying tags

L (M) Legislation at macro level

EV (M) Environmental at macro level

MP (M) Marketing and publicity at the macro level

LE (OFMP) Legitimacy marketing and publicity at the organisational field level

IC (OFS) Industrial coalitions support at the organisational field level

KRI (OLMM) Key reflective individual marketing manager at the organisational level

CC (OLMM) Change champion marketing manager at the organisational level

B (MCS) Budgeting management control system at the organisational level

C (MCS) Costing management control system at the organisational level

TCO (MCS) Total cost of ownership management control system at the organisational level

ROI (MCS) Return on investment management control system at the organisational level

PB (MCS) Payback management control system at the organisational level

AMS (MCS) Arup Management System management control system at the organisational level

Appendix E Author outputs based on this thesis research

Atchulo, A. (2013) 'Funding models for electric vehicles', *Smart urban transport policy futures with a focus on electric vehicles*. University of Greenwich, 27–28 June 2013.

Atchulo, A. (2013) 'Funding models for electric vehicles', *49th British Accounting and Finance Association (BAFA) Annual Conference*. Newcastle, April 2013.

Atchulo, A. (2012) 'Social and environmental investment appraisal: why reinvent the wheel? A look at Milton Keynes Electric Light Vehicle InfraStructure 'ELVIS' project', *24th CSEAR International Congress on Social and Environmental Accounting Research*. University of St. Andrews, 3–5 September 2012.

Potter, S., and Atchulo, A. (2013) 'A review of ten years of CO₂-based company car taxation: impact and potential', *Universities Transport Studies Group Annual Conference*. Oxford, 3–5 January 2013.

Potter, S., and Atchulo, A. (2012) 'The role of company car taxation to promote low-carbon vehicle technologies', *Universities Transport Study Group Conference*. University of Aberdeen, January 2013.